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EXCESSIVE ACETYLATION OF SULFANILAMIDE IN ADVANCED RENAL DISEASE*

Report of a Case

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CHICAGO

MARSHALL, Emerson and Cutting[1] have shown in the human subject that more than 90 per cent of the quantity of sulfanilamide ingested is excreted by the kidneys. Stewart, Rourke and Allen[2] demonstrated that this drug is rapidly cleared from the blood stream in a manner similar to that of urea. From these two studies the clinical inference has been made that sulfanilamide should be used with caution in cases of impaired renal function. However, careful observations have not been made on human subjects concerning the excretion of this drug in cases of severe renal disease.

It is the purpose of this paper to report a case of duodenal ulcer with advanced renal disease in which sulfanilamide was given in the treatment of a wound infection. In this patient the blood concentration of both the free and the conjugated forms of sulfanilamide rapidly became excessive, although the quantity given was well within the limits of present usage. The accumulation of excessive acetylsulfanilamide has been reported in the nephrectomized rabbit.[3] This phenomenon has not been reported in man. Since the acetylated portion of sulfanilamide is many times more toxic than the free form, it is possible that the excess of acetylsulfanilamide which occurred in this patient was a contributory cause of death.

CASE REPORT

A 59-year-old, white, married bookkeeper was admitted to the University of Chicago Clinics on December 12, 1938, complaining of epigastric distress and vomiting following meals.

In 1935 an ulcer in the first portion of the duodenum had been demonstrated by fluoroscopic examination. The patient was at that time placed on careful ulcer management, including powders, but in spite of this regime the ulcer symptoms continued, and between August, 1937, and May, 1938, he experienced three bouts of hematemesis. About 2 months prior to admission symptoms of pyloric obstruction first appeared, and this diagnosis was confirmed by x-ray examination on admission.

For 7 years preceding 1937 the patient experienced increasing symptoms of urinary obstruction from benign prostatic hypertrophy. A transurethral electroresection was done on June 24, 1937, and relief of symptoms was obtained, although mild urinary frequency persisted. The nonprotein nitrogen at the time of operation was normal, but the urine was heavily infected with colon bacilli. The postoperative course was otherwise uneventful.

On admission to the University Clinics a gastroenterostomy for relief of pyloric obstruction was advised. However, because of moderate alkalosis and a severe reduction of urea clearance (Table 1) surgery was delayed, and the ulcer powders which the patient had taken continuously for 2 months were discontinued. Sodium chloride in large quantities was given orally and parenterally, but the response was slow and minimal. No further significant findings were observed, and icterus was never present.

TABLE 1. *Urea Clearance and Acid-Base Studies of Blood from the Time of Admission until That of Death.*

HOSPITAL DAY	BLOOD UREA NITROGEN	UREA CLEARANCE	BLOOD CHLORIDES	BLOOD CARBON-DIOXIDE	BLOOD REACTION
	mg. per 100 cc.	*cc. per min.*	*millimols/l.*	*millimols/l.*	*pH*
1	40.7 53.6*	11	94.0	30.7	—
7	45.2	8	72.0	45.0	7.62
11	43.5	—	86.0	38.1	7.63
15	38.8	17	97.8	32.9	7.53
18	—	17	97.0	—	7.62
28	—	—	—	—	7.52
45	17.0	17	98.8	24.0	7.47
57	20.4	20	98.0	26.4	7.34
64	27.3	18	97.6	22.8	7.32
71	26.6	17	98.2	20.0	7.38
73	30.0*	—	96.3	16.8	7.60
74	58.0*	—	96.8	16.7	—
77	80.0*	—	—	—	—

*Total nonprotein nitrogen.

On the 28th hospital day a posterior gastroenterostomy was done. The early postoperative course was uneventful, but on the 34th day a superficial wound abscess was found

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and drained. A mild elevation of temperature developed on the 39th day and continued through the 46th day. The patient was then afebrile until the 57th day, when temperature elevations to between 99.0 and 103.0°F. gradually developed, although no satisfactory explanation for this fever was found. Blood cultures on the 43rd, 46th, 70th and 71st days showed no bacterial growth, and agglutination tests for typhoid, paratyphoid A and B and undulant fever bacilli and infectious mononucleosis were negative. The white-blood-cell count slowly rose to 20,000 by the 69th day.

Beginning on the 70th hospital day, sulfanilamide was given in doses of 15 gr. (1.0 gm.) every 4 hours for 3 days, making a total of 255 gr. (16.5 gm.). On the morning of the 73rd day the patient was somewhat stuporous, so sulfanilamide was discontinued. Blood was drawn for chemical studies and a free-sulfanilamide blood level of 28 mg. per 100 cc. was noted (Table 2). On the 74th day

TABLE 2. *Conjugated and Free Sulfanilamide in the Blood and Urine from Time of Discontinuance of the Drug until Death.*

Postopera-tive Day	Blood Sulfanilamide		Urine Sulfanilamide		Fluid Intake	Urine Volume
	Free	Total	Free	Total		
	mg. per 100 cc.	*mg. per 100 cc.*	*mg. per 100 cc.*	*mg. per 100 cc.*	*cc.*	*cc.*
73	28.0	—	—	—	—	—
74	19.8	37.8	41.7	312.0	3500	1200
75	8.6	29.0	41.5	147.0	6200	2175
76	—	—	20.0	116.0	4500	500
77	1.2	14.1	0.0	0.0	3000	0

the free blood sulfanilamide was 19.8 mg. per 100 cc., while the total, including the combined form, was 37.8 mg. Both forms slowly fell, and on the 77th hospital day the acetylsulfanilamide blood level was 12.9 mg. per 100 cc., while the free level was only 1.2 mg., resulting in a total of 14.1 mg. The blood chlorides, calcium, phosphorus and nonprotein nitrogen were normal, although the blood-carbon-dioxide content was slightly reduced. Complete urinary collections were begun on the 74th hospital day by means of an inlying catheter, and daily samples were analyzed for their sulfanilamide content (Table 2). Large amounts of fluids were given parenterally in hope of producing a diuresis to facilitate sulfanilamide excretion. However, the patient's urinary volume gradually decreased, and he became anuric during the last 18 hours of life. He died on the 77th hospital day in respiratory failure.

At autopsy the recent midline abdominal scar contained the opening of a small sinus in its upper third, from which about five drops of pus were expressed. This sinus ended blindly in a mass of scar tissue on the anterior surface of the duodenum. There were numerous adhesions in the abdominal cavity between the liver, the stomach, the duodenum and the anterior abdominal wall, although no free fluid or abscesses were found. The stoma of the gastroenterostomy was patent and competent. The ulcer on the posterior wall of the duodenum gave evidence of healing; there were no signs of recent bleeding or perforation, although a high grade of stenosis was present in the first portion of the duodenum. The kidneys were small and pale, their combined weight being 165 gm. Their capsules stripped with ease from smooth, pale surfaces. The cortical markings were obscure. The pelvic fat was increased, and each renal pelvis was dilated and thick-walled. The calyces were large and clubbed at their ends. The urinary bladder was contracted and thick-walled, and the prostate was small. Except for several small areas of consolidation at the right base the lungs and heart were normal. One of the three parathyroid glands found was definitely enlarged. There were numerous areas of fibrocystic disease in the skeleton.

The microscopic studies added little. In the kidneys there was destruction of most of the tubules and many of the glomeruli, with deposits of calcium in some of the tubules; and from the gross and microscopic findings the diagnosis of a chronic ascending nephritis was made. The evidence of hyperplasia of one of the parathyroid glands was confirmed by microscopic section.

Discussion

Since the excretion of sulfanilamide by the kidneys is quite similar to the excretion of urea, it is presumable that any renal damage sufficient to impair the clearance of urea might also effect the clearance of sulfanilamide. Furthermore, as the kidneys represent the sole important channel of escape of this drug, any delay in the renal excretion of sulfanilamide would allow it to accumulate in the blood stream. In the case presented here a severe reduction of urea clearance had been demonstrated (Table 1), and this functional impairment is attributed to a chronic ascending nephritis, plus the effect on the kidneys of a prolonged period of alkalosis. Under these conditions a high grade of retention of sulfanilamide resulted, which in turn gave rise to excessive blood concentrations of this drug. Such a high sulfanilamide blood level may also be produced by giving excessive quantities of the drug, but in this case, since the dose did not exceed present practice, all evidence points toward delayed excretion as the cause of this abnormally high concentration.

It is very interesting to note that most of the sulfanilamide retained was rapidly conjugated into the acetyl form at the expense of the free sulfanilamide, which practically disappeared from the circulating blood. Twenty-four hours after the drug was discontinued a total blood level of 37.8 mg. per 100 cc. was present, and of this quantity 18 mg., or 47 per cent of all the circulating sulfanilamide, was conjugated. This percentage slowly increased until twelve hours before death, when more than 90 per cent of the remaining drug was in acetyl form. There was, of course, a slow quantitative decline commensurate with the retarded renal loss. Such a high percentage of the drug appearing in the conjugated form is not ordinarily seen in patients receiving sulfanilamide. However, Stewart, Rourke and Allen[3] have reported a similar, abnormally high percentage of acetylsulfanilamide in the rabbit when excretion of the drug was prevented by nephrectomy. In this animal the site of conjugation is in the liver. These workers showed that the process of acetylation, which continues at a relatively constant rate in the nephrectomized rabbit, gradually results in the

complete acetylation of a given amount of sulfanilamide in two or three days. Consequently, the unusually high percentage of acetylsulfanilamide present in the case here discussed suggests that in the human subject conjugation also progresses at a relatively fixed rate unrelated to renal function, and that when a given amount of sulfanilamide is retained in the circulatory blood for a period of time longer than normal, a greater proportion of drug becomes acetylated.

The significance of acetylsulfanilamide in man is not clearly understood. However, Marshall, Cutting and Emerson[4] produced severe toxic symptoms in the rabbit when the acetyl form exceeded 7 to 9 mg. per 100 cc., but untoward symptoms were not manifested when free sulfanilamide was given until a blood concentration of more than 40 mg. was obtained. These workers suggest that many of the gastrointestinal and cerebral symptoms occurring in man may be associated with an increased amount of circulating acetylsulfanilamide. Therefore, in cases of renal disease where delayed excretion may lead to excessive quantities of conjugated sulfanilamide, the toxicity of the drug may be considerably increased; so that until further clinical knowledge is available sulfanilamide should be used with great caution in cases in which delayed excretion of the drug may occur. In this case it was impossible to assign a cause of death. Since the brain was not examined, death from cerebrospinal disease cannot be excluded, but the presence of such large amounts of free sulfanilamide and acetylsufanilamide in the blood stream may have been contributory in the cause of death.

Summary

A case of duodenal ulcer and unexplained fever with severe renal disease is presented in which excessive blood levels of free sulfanilamide and acetylsulfanilamide were obtained, although the quantity of the drug given was not excessive.

The abnormally high percentage of acetylsulfanilamide and its association with delayed excretion of the drug are discussed.

The importance of cautious administration of sulfanilamide to patients with renal disease is emphasized.

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THE USE OF CIRCULATION-TIME DETERMINATIONS IN THE DIAGNOSIS OF VENOUS-ARTERIAL SHUNTS*

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BOSTON

IN THE study and diagnosis of heart disease the determination of circulation time may be a definite aid to the clinician, and in some cases, as we shall point out later, may be as valuable as the stethoscope, sphygmomanometer, roentgenogram or electrocardiogram.

Normally the arm-to-lung circulation time, that is, the time needed for the blood to travel from the antecubital vein through the right side of the heart to the lungs, is four to eight seconds.[1–5] The arm-to-tongue time is ten to sixteen seconds[1, 4, 6, 7]; in this interval the blood travels to the lungs as previously, but in addition must return to the left side of the heart and finally go to the taste buds of the tongue.

Hemodynamic changes in cardiac disease frequently affect the velocity of blood flow, which in turn results in abnormal circulation-time determinations. Cardiac disease may cause a prolongation of circulation time (decrease in blood velocity), an acceleration of circulation time (increase in blood velocity) or no change.

Circulation-time determinations have been found useful in studying the hemodynamics of early congestive heart failure.[8] Blumgart and Weiss[9–11] have shown that a prolonged circulation time frequently precedes the clinical signs of cardiac failure such as edema, rales in the lungs, cyanosis and distended veins. Although congestive heart failure is the most frequent cause of prolonged circulation time, this finding has also been noted in idiopathic and secondary polycythemia, and in hypothyroid states and other conditions causing a decrease in body metabolism.[12]

The diagnosis of heart disease produced by avitaminosis B_1 is facilitated by the presence of an

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accelerated circulation time.[13] An accelerated circulation time is also found in anemia, hyperpyrexia[14] and cardiac conditions associated with hyperthyroidism.[12, 15]

Another clinical use of circulation time is in differentiating cardiac and noncardiac conditions, as, for example, in distinguishing between cardiac and bronchial asthma. In the former the circulation time is prolonged, while in the latter it is normal. Still another possible application of these tests is to demonstrate certain cardiac malformations, congenital or acquired, and it is this use that we shall discuss more fully.

In a venous-arterial shunt there is a direct mixing of unoxygenated or venous blood with oxygenated or arterial blood. Clinical examples of this condition are seen in congenital or acquired interventricular septal defects with right-sided cardiac hypertrophy, three-chambered hearts, transposition of the aorta, anomalies of blood vessels and so forth. In these cases the patient is cyanotic at all times.

The arm-to-lung circulation time in a venous-arterial shunt is normal, since the blood goes on its regular route from the arm to the right side of the heart and to the lungs. The arm-to-tongue time, however, is lessened, because a certain percentage of blood, after traveling from the arm to the right side of the heart, is shunted to the left side through the existing anomaly or defect, avoiding the pulmonary circulation entirely and continuing on to the tongue. The pulmonary circulation is short-circuited in this course, thus reducing the duration of arm-to-tongue time. Since the time needed for the blood to travel from the arm to the right side of the heart and to the lungs (arm-to-lung time) is about the same as the time needed to travel from the arm to the right side of the heart, to the left side (through defect) and to the tongue (arm-to-tongue time), one should find the two times about the same in a case of venous-arterial shunt.

With this principle in mind, as first pointed out by Benenson and Hitzig[16] at Mt. Sinai Hospital in New York City, circulation-time determinations were performed in the following case, one of tetralogy of Fallot — interventricular septal defect, pulmonary artery stenosis, right ventricular enlargement and transposition of the great vessels as they emerge from the heart.

Case Report

R. M., a 19-year-old Italian-born white girl, was admitted to the Boston City Hospital on January 17, 1939, complaining of fatigue of many years' duration and of a generalized cyanosis, especially marked on the face and extremities. In November, 1938, she had been on another service of the hospital for the same complaints.

Eleven years previously the patient had been told that she had "rheumatic heart disease." The chief complaints at that time were weakness, fatigue and failure to gain weight, and these symptoms had continued to the present, associated with occasional palpitation of the heart. She was always up and around, however, except for the year previous to entry, when her fatigue became so marked that she voluntarily stayed in bed. When the fatigue was most marked the persistent cyanosis became more intense and the extremities felt cold. The patient had moderate dyspnea on exertion and was more comfortable in the upright position. Nocturia — two or three times — had been present during the month previous to admission, and the menses, which had started at the age of fourteen, were scant and irregular. There was no history of joint, muscle or chest pain, sore throat, chorea, fever, night sweats, epistaxis or edema.

Physical examination revealed a poorly nourished, underdeveloped white girl, moderately fatigued and orthopneic but not acutely ill. The skin was bluish-scarlet, especially over the nose, cheeks and extremities. The head, neck and lungs were normal. The chest wall had a moderate *Trichterbrust* deformity. The apex beat of the heart was sharply felt in the fifth interspace, 7.5 cm. from the midsternal line. The rate was 130 per minute and regular. A systolic thrill was palpable over the pulmonic area. A loud, harsh systolic murmur was heard over the third and fourth interspaces to the left of the sternum, and was transmitted toward the left axilla. The second pulmonic sound was markedly accentuated. The extremities were cyanotic, felt very cold and showed clubbing of the fingers and toes. The remainder of the examination was normal.

The red-blood-cell count varied between 7,210,000 and 8,890,000, and the hemoglobin between 20.0 and 25.4 gm. (Sahli) per 100 cc. The white-cell count was 16,900 with 76 per cent polymorphonuclear leukocytes and 24 per cent lymphocytes. Several specimens of urine were negative except for an occasional white cell per high-power field. Repeated stool examinations were negative for occult blood. A blood Hinton test was negative. The blood pressure was 118/88 in both arms. Electrocardiographic tracings showed a right-axis deviation at all times, and 7-foot roentgenograms of the heart revealed a constant accentuation of the pulmonary conus.

The arm-to-lung circulation time (normal, 4 to 8 seconds) was determined by the use of 5 minims of ether diluted with an equal amount of physiological saline solution, the time being recorded from the injection of the ether to the moment the patient smelled it. Paraldehyde in similar dosage and dilution was also used for measuring the arm-to-lung time. The ether times were 8.1 and 8.2 seconds, while the paraldehyde times were 8.1 and 8.6 seconds. No systemic vascular reaction was experienced.

Arm-to-tongue circulation time (normal, 8 to 16 seconds) was determined by the injection of 5 cc. of Decholin (dehydrocholic acid) solution, and also of 5 cc. of calcium gluconate solution. The patient indicated the moment she tasted the substances. The calcium gluconate times were 8.4 and 9.2 seconds, and both Decholin times were 8.0 seconds.

Each determination of arm-to-lung and arm-to-tongue time was repeated at least four times, and reasonable checks were obtained. Interspersed among the actual tests, physiological saline solution alone was injected intravenously on two occasions, the patient being requested to indicate the end point; no taste or smell sensations were noted.

Observations were made on various days. On all occasions the patient was co-operative, alert and intelligent, making us feel confident in the results.

The arm-to-lung and arm-to-tongue circulation times were practically identical, the respective averages being 8.3 and 8.4 seconds. We believe this similarity in results to be due to a functioning venous-arterial connection as discussed earlier in this paper. The arm-to-lung circulation-time determinations of 8.1 to 8.6 seconds are slightly above the accepted normal upper limit of 8 seconds. This finding is readily explained by the secondary polycythemia present in this case.

Benenson and Hitzig's[16] results in 2 cases of tetralogy of Fallot, with ether and saccharin as test agents, were similar to ours. In one case the arm-to-lung time was 11.0 seconds, and the arm-to-tongue time 11.8 seconds; in the other case the times were 7.5 seconds and 3 to 4 seconds respectively. McGuire and Goldman[17] observed accelerated arm-to-carotid-sinus times (3.8, 4.8 and 4.0 seconds respectively) with the use of sodium cyanide in 3 cases of tetralogy of Fallot, but they did not make arm-to-lung-time determinations. Several conditions may cause an accelerated arm-to-tongue (or arm-to-carotid-sinus) circulation time. The diagnostic value of circulation-time determinations does not lie in any change in arm-to-lung or arm-to-tongue time, but in the finding of similarity between them.

Summary

Circulation-time studies were performed in a case of venous-arterial shunt (tetralogy of Fallot). The arm-to-lung and arm-to-tongue circulation times were found to be similar.

This result can be utilized to establish the diagnosis of venous-arterial shunt.

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CLINICAL NOTE

PNEUMOPERITONEUM DUE TO PERFORATION OF THE TRANSVERSE COLON IN AN UMBILICAL HERNIA

Report of a Case

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BOSTON

PNEUMOPERITONEUM from perforation of an ulcer of the intestinal tract, particularly in the duodenum, is not uncommon. This same condition has also been reported from traumatic rupture of the bowel from the use of compressed air in industry where the bowel is forcefully distended with air via the rectum.[1-3] Examination of the literature, however, reveals no report of pneumoperitoneum from causes as presented in the following case, and it would therefore seem of interest to report this case in some detail:

FIGURE 1.

CASE REPORT

The patient, R. M., was a 69-year-old German housewife. Her past history was irrelevant. She had always been healthy until 1 hour before being seen, when she had a sudden chill with pain in the right upper quadrant of the abdomen, associated with nausea and marked cyanosis. She complained of severe general abdominal pain and difficulty in breathing. She looked extremely sick. There was deep cyanosis. The abdomen was markedly distended and tender throughout, with the maximum point of tenderness in the right lower quadrant. There was an umbilical hernia about 7 cm. in diameter which contained

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no viscera, but free gas which could be readily expressed. There was complete obliteration of liver dullness. The pulse was 96, regular and of good quality; the blood pressure was 112/80. The patient was sent at once to the hospital, where Wangensteen drainage of the stomach was instituted, without relief of the distention. X-ray films of the lower thorax and abdomen taken with the patient semi-upright showed marked elevation of both leaves of the diaphragm due to a pneumoperitoneum; there was a single tremendously dilated loop of large bowel in the right flank (Fig. 1).

Under novocain infiltration and cyclopropane anesthesia, a laparotomy was performed through a right rectus muscle-splitting incision. When the peritoneum was opened a large amount of foul-smelling gas escaped, with immediate decompression of the abdominal wall. The cecum was tremendously dilated, but no perforation was found at this point. No bowel was protruding into the umbilical hernia. There was diffuse peritonitis along the course of the cecum and ascending colon but no fecal matter was found free in the peritoneal cavity. The incision was extended upward, and an area of necrosis was found in the transverse colon about 3 cm. in diameter, lying 3 cm. medial to the hepatic flexure. The bowel was not strangulated, but there was a minute perforation in the middle of the necrotic area. The hepatic flexure was freed so that the necrotic area of bowel could be exteriorized, suturing the bowel together as in a Mikulicz type of operation. A Mixter tube was then inserted at the site of perforation. No effort was made to drain the abdominal cavity.

The patient had two chills on the 1st and 2nd days following operation, with a fall in temperature to normal on the 7th day. The colostomy opening drained well. The Mixter tube sloughed out spontaneously in 5 days. Clamps were applied on the 12th day after operation. Phlebitis developed in the right leg but subsided in 10 days. Three weeks after the operation the patient was having excellent bowel movements by rectum and there was very little drainage from the operative site. Shortly after this, a polyp protruded from the rectum with each defecation. This was removed 5 weeks after the first operation. The patient made an entirely uneventful convalescence from this operation and was discharged 69 days after entry, at which time the colostomy opening was almost entirely healed.

Three months after discharge the patient died at home from a cerebral hemorrhage. No autopsy could be obtained.

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REPORT ON MEDICAL PROGRESS

DIAGNOSTIC ROENTGENOLOGY

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BOSTON

IN THE progress report[1] of last year emphasis was laid upon a description of the general trends which have characterized the development of diagnostic roentgenology in recent years. This year a few specific diagnostic problems have been selected for discussion, the choice being based in part on the fact that the articles in question have described something new, in part on the opinion of the reviewer that the particular subject has enough everyday importance to warrant the discussion of its present status.

ROENTGEN EXAMINATION IN PATIENTS WITH ILEUS

Recent developments in the diagnosis and treatment of ileus have influenced the work of roentgenological departments.

Roentgenology has been used for many years as an aid in establishing the diagnosis, localization and progress of the disease process in patients with ileus. Case[2] was one of the first to emphasize the importance of the flat ("scout") film of the abdomen for these purposes. Such films have become a routine procedure, since they represent "the most important single objective finding in the patient with small-bowel obstruction"[3] in particular, and of any kind of ileus in general. They usually establish the diagnosis of ileus, positive findings being more conclusive than negative ones. If there is obstruction in the colon, such films often allow a differentiation from paralytic ileus, whereas the distinction between mechanical and paralytic ileus is usually not possible in cases of obstruction within the small bowel or at the ileocecal valve. Not infrequently a localization of the point of obstruction is possible, especially in the colon. A barium-enema examination may be necessary to differentiate a large atonic colon without obstruction from a case of low large-bowel obstruction. In addition it will in most cases define the etiology of the obstruction.

The enthusiasm which has developed for study and treatment of small-bowel disease in the last

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few years has been due to the introduction of the Miller-Abbott tube,[4] by which the distended loops of small bowel can be deflated and investigated. For many years Wangensteen[5] has emphasized the importance of deflation in the treatment of ileus, and constant suction through gastric or duodenal tubes has become common practice for this purpose. The Miller-Abbott tube with its two channels — one for suction, the other for the inflation of a balloon close to the end of the tube — has the advantage that it can be introduced into the small intestine, where it is then propelled by peristalsis until it stops at the point of obstruction. The tube was originally used for physiological studies, then for deflation in ileus, later in the localization of obstructive lesions and finally in the demonstration of the obstructing lesion and its character.[6]

Abbott[7] characterizes the beneficial effects of intubation as follows: emptying of the intestine and restoration of the peristalsis; supplying data for adjustment of the fluid and electrolyte balance of the body; relieving the obstruction itself; identifying the location and nature of the lesion; simplifying the technic of any required surgical procedure; protecting the suture lines after operation; and converting an emergency into an elective surgical procedure.

The application of the tube requires some training and experience, so that disappointment not infrequently attends the first attempts at using it. The necessity of close, patient co-operation between surgeon and roentgenologist is stressed by those experienced in its use.

What is the role of the roentgenologist in this combination? It can be divided into two parts, one before and one after the tube has reached the point of obstruction. The most valuable help the roentgenologist can give in the first part of the examination is in guiding the tube through the pylorus. This is the most difficult part of the procedure. Failures of the method have usually been due to the impossibility of getting the tube into the duodenum; therefore, if possible, this part of the examination should be done under fluoroscopic control. The tube may roll up in the stomach, in which case it should be withdrawn to a proper length. The tip of the tube must be guided toward the pylorus and at times may be massaged into the duodenum. A drink of cold water, as recommended by Holmes, is of advantage in opening the pylorus. After the tube has passed the pylorus and the balloon is inflated, follow-up films may be taken at intervals of twelve to twenty-four hours with a bedside unit to control the progress of the tube and check the degree of deflation taking place proximal to the balloon.

If the tube is used for deflation only, the main part of the roentgenological examination ends after the tube has stopped progressing and complete deflation has taken place. In other cases it is desirable to use the tube to investigate the area of obstruction. This may be done with a small amount of barium injected into the suction channel of the tube after deflation of the balloon. Several authors have reported good results with this method, which should be done under fluoroscopic control and preferably with the use of spot films.[8, 9] In paralytic ileus the absence of obstruction can be demonstrated, and in mechanical ileus the exact location and character of the obstructing lesion can be visualized. A differentiation between obstruction due to neoplasm, inflammation or adhesive bands is usually possible.[9] Lofstrom and Noer[8] enumerate the advantages of this type of barium examination as follows: only small amounts of barium are necessary; the barium is not diluted by secretions, these having been aspirated; the method is not dangerous, and most of the barium can be aspirated at the end of the examination.

Lofstrom and Noer have also recommended the Miller-Abbott tube for the examination of an isolated loop of small intestine in cases without obstruction. For this purpose the holes in the tube distal to the balloon are omitted, and the balloon instead of being deflated is inflated before the barium is injected. By this "segmental survey," which can be improved by using a tube with three channels and two balloons, any desired degree of barium filling is possible in any part of the small intestine. This is an ideal method of examining this portion of the intestinal tract, and is useful in certain cases. It is time-consuming, and, unless combined with a preceding routine examination which localizes the questionable lesion, not without danger for patient and doctor, owing to the amount of radiation which both may receive.

Prepyloric Ulcer

The aim of roentgenology, and of gastrointestinal roentgenology in particular, is to demonstrate accurately the gross pathologic appearance of the lesion. By means of careful fluoroscopic studies, palpation, spot films, and profile and relief pictures of the lesion and its surroundings, the appearance of the lesion as it would be seen from the inside of the intestine can usually be well visualized. For this reason the roentgenological diagnosis of cancer of the stomach, particularly

ulcerated cancer, is fairly easy in most cases, just as it is for the pathologist when he inspects the opened specimen.

The situation of the roentgenologist is different in those cases in which gross inspection of an ulcerated gastric lesion does not allow the pathologist to differentiate benign and malignant ulcer — lesions in which the microscopic examination determines the final verdict. It is obvious that no macroscopic examination, including roentgenograms, will provide a diagnosis in such a case.

A number of authors have stressed the fact that these malignant ulcers (grossly benign but microscopically malignant) are particularly common in the prepyloric region. Several years ago Hampton[10] reviewed the operative and autopsy findings as well as the postoperative follow-up on patients with chronic prepyloric ulcerations. The prepyloric region was defined as an area 2.5 cm. long, immediately proximal to but excluding the pylorus. The center of the ulcer was taken as its origin, and its distance from the pylorus then determined the classification of the ulcer within or without the group in question. Included in this study were all ulcerations in the prepyloric area which roentgenologically showed evidence of induration, that is, of chronicity, but which failed to show an obvious cancerous growth surrounding the ulceration. In other words, these cases had all the roentgenological criteria which were thought to characterize benign peptic ulcers of the stomach. Eighteen of the ulcerations were found to be cancerous histologically, though many of the lesions appeared benign at the gross inspection of the opened specimen. Only two ulcerations were found in this series which on serial sectioning proved to be benign. Eight additional cases were quoted from the old records of the Massachusetts General Hospital in which the operative findings were thought to indicate a benign prepyloric ulcer; hence a resection was not performed, but the follow-up later proved the cases to have been carcinomatous in nature. In other words, these studies showed that, excluding the obvious ulcerated prepyloric cancers, it was impossible to decide roentgenologically, or by any other method short of serial histological studies, whether an indurated ulcer in the prepyloric area was benign or malignant, but that the chance of its being malignant was very high.

Using similar but not identical criteria for defining the group of cases, Singleton[11] found a higher incidence of benignity: namely, seven benign to four malignant ulcers. He believed that a careful follow-up of ulcerations in the prepyloric area would usually allow a roentgenological statement in regard to benignity or malignancy, although he admitted that a malignant ulcer might decrease in size or even disappear under medical treatment.

Another paper on this subject (that of Sampson and Sosman[12]) appeared within the last year and confirmed Hampton's conclusions. Among the cases quoted in this paper one is of particular interest in regard to the necessity of a complete pathological examination. An ulcer in the antrum but not strictly in the prepyloric area had been excised. The anatomical diagnosis was, "Chronic gastric ulcer; no evidence of tumor." The patient returned to the hospital six years later with a frank gastric carcinoma. The original specimen being still available, new sections were made which showed the presence of cancer cells similar to those of the tumor removed at the second operation. The authors concluded:

> 1. Chronic ulcers in the prepyloric inch of the stomach are found to be cancerous in 75 per cent of our cases. It may be necessary to cut many histological sections through the excised ulcer to find the area of carcinoma.
>
> 2. These small prepyloric ulcers defy differential diagnosis by all methods of examination except histological, and even the pathologists have erred in some of them.
>
> 3. Proved cases of prepyloric malignant ulcers are herewith reported: (*a*) in young persons, (*b*) with high gastric acidity, (*c*) with clinical improvement under ulcer therapy, (*d*) with decrease in the size of the ulcer under alkaline therapy, and (*e*) with roentgen findings simulating benign ulcers.
>
> 4. We believe that prepyloric ulcers which do not disappear entirely in a few weeks should be treated by radical resection, and even those that disappear should be carefully followed and re-examined periodically.

Studies such as these should not be considered as diagnostic short cuts. They do not relieve the roentgenologist of the necessity of studying a questionable lesion in the prepyloric area with meticulous care. In most cases of cancer, he will be able to recognize grossly the malignant character of the lesion. There remain, however, those cases of indurated ulceration in which a gross differentiation of benign and malignant ulcer is not possible. Benign ulcers do occur in the prepyloric region, but they represent a comparatively small minority. The question of whether or not the rather small risk of a gastric resection is larger than the great risk of neglecting a gastric cancer is a clinical one which has to be answered from case to case.

Roentgenological Examination of the Placenta

In last year's progress report[1] attention was called to a method which demonstrates placenta previa by the increase in the normal distance between the

fetal head and the urinary bladder filled with a contrast substance.

Snow and Rosensohn[13] and Brown and Dippel[14] in a confirmatory report have shown that it is possible to visualize the placenta directly. This is particularly true in those cases where it, as usual, does not lie in the pelvis. On good roentgenograms made without the use of any contrast substance the placenta can be seen as a localized bulge in the soft-tissue shadow of the uterine wall. It has a characteristic shape, and is usually clearly differentiated from other tissues by the subcutaneous fat layer of the adjacent fetus. Since the placenta commonly lies on the anterior or the posterior wall of the uterus, a lateral view is usually more successful, though both lateral and anteroposterior views should be taken. The presence of placenta previa can be excluded if the placental shadow is demonstrated in the fundus of the uterus. On the other hand, absence of demonstrable placental shadow is suggestive of placenta previa. This diagnosis may be confirmed by the injection of air into the bladder. (Snow and Rosensohn, as well as Brown and Dippel, prefer the injection of 150 cc. of air to that of radio-opaque substances, using it as a routine procedure.) Placental apoplexy (premature separation), polyhydramnios and extrauterine pregnancy have been diagnosed on the soft-tissue films.

These studies represent a definite advance, especially in the cases of bleeding of unknown origin during pregnancy. Seen from a broader viewpoint, they are another application of soft-tissue roentgenology, a branch of roentgenology still in its infancy.

Fatigue Fractures, Wear-and-Tear Fractures, Pseudofractures

A number of reports have been published in recent years concerning peculiar "fractures" of various bones, but especially of the tibia. In these cases a thin fracture line may be seen running usually straight across the bone, surrounded by a bandlike zone of increased bone density. The appearance of the dense zone may even precede the demonstration of the fracture line. There is usually local pain and tenderness, but no deformity. A single trauma does not seem to play any role in the history. The appearance of the lesion is very characteristic, inasmuch as it is usually seen in very definite regions. For example, in the tibia it occurs at the junction of the proximal and second quarters of the bone. Roberts and Vogt,[15] who published a report of 12 cases observed in the tibia, described the characteristic clinical course and the roentgenological appearance of the lesions. They believe that the exact nature of the condition is not known, but conjecture that it may possibly be due to chronic infection, perhaps influenced by the course of nutrient vessels, rather than to fracture.

These "fractures" are not confined to children. Reports from Finland and Germany[16–18] indicate that they are not rare in soldiers, in whom the clinical picture is similar to that seen in children. These authors conclude that the lesion represents a chronic fracture, produced by repeated stress bearing upon the same spot in unprepared, untrained and possibly deficient bone. They compare such fractures to the fatigue breaks which occur in metal as a result of constant vibration or repeated bending back and forth.

These lesions are believed to represent only a special type within a large group of similar fractures, of which the so-called "march fracture" of the metatarsals is the commonest and best-known example. Other less common sites are the fibular shaft, the femoral neck, the medial portion of the upper femoral shaft, the inferior ramus of the pubic bone and the os calcis. Fracture of the first rib occurring in untrained persons who are forced to carry heavy loads on their shoulders has been explained on a similar basis.[19] The so-called "navvy's" or shoveler's fracture,[20] a peculiar type involving the tips of the first dorsal and seventh cervical vertebrae, which occurs in poorly trained persons compelled to do hard labor, especially with pick and shovel, is thought to be due to the chronic trauma of constant muscle pull. In keeping with this explanation, the first symptoms in most cases do not appear until several weeks of hard labor have elapsed, indicating that repeated rather than single trauma is causatively concerned.

Fine fracture lines which occasionally occur in great numbers in a bone with Paget's disease, as well as transverse lines of decreased density in osteomalacic bones, are thought to be due to a similar mechanism. In these cases the diseased bone is not adequate for the stress of normal activity.[17]

All these processes are obviously of great theoretical interest, but their recognition is also of practical moment in regard to proper diagnosis, prognosis and treatment. In this connection I have seen a case of chronic fracture of the tibia with marked bone condensation in an adolescent in whom the diagnosis of Ewing's tumor was erroneously made and amputation advised.

Screen Photography

The idea of obtaining roentgenograms by using an ordinary camera to photograph the image on

the fluoroscopic screen goes back to the years immediately following Roentgen's discovery. Caldwell, among others, spent considerable effort on developing this method, but not until marked improvements had been made in the construction of fluoroscopic screens, x-ray tubes, photographic lenses and films did it attain any practical importance.

Advantages which the photographing of the fluoroscopic screen image offers in comparison to large-film radiography are several. On account of its smaller size the photographic film is less expensive. It is also more convenient if a large number of films of various persons are to be taken in rapid succession. The storage of such films is easier and less expensive than that of the usual-sized roentgenograms. In other words, there would be a large field for screen photography provided the quality of the pictures were comparable to that of routine direct roentgenograms.

The principle of the apparatus used by the various investigators is similar. A small photographic camera, usually of the Leica type, is firmly attached to the fluoroscopic screen at a certain distance. Most authors use a film 24 by 36 mm. in size while a few use larger sizes (75 by 75 mm. or 4 by 5 in.) An *f*1.5 lens is used in most cases.

The advantages of screen photography are particularly obvious in the routine serial examination of large groups, such as students, employees, soldiers, tuberculous suspects and so forth. De Abreu,[22] in Brazil, was the first to use this method for such purposes. Janker[23] deserves credit for several technical developments. The enthusiasm of these men and others has stimulated the extensive use and development of this method for serial examinations in a number of countries, particularly Brazil, Argentina, Uruguay, Germany and to lesser degree France and Italy. So far, the use of the method in the United States has remained limited. A few papers on the subject have appeared within the last year: Lindberg,[24] Potter, Douglas and Birkelo[25] and Hirsch.[26]

A well-organized set-up is important for the rapid and efficient functioning of serial examinations. De Abreu advocates the creation of centers for complete thoracic surveys, using photographic installations in each of them. He believes that one million examinations could be done in such a centre in one year, thus making it possible to examine the total population of large cities initially and at routine intervals. Transportable machines have been constructed in Germany,[27] and with military help an organization has been created which is rather interesting, though its applicability outside of Germany is for many reasons unlikely. The organization is divided into two branches, one stationary and one motorized. The stationary division supervises the operation of the project, processes the films and makes enlargements when necessary. The motorized division moves from town to town and sets up the equipment two or three times a day. The population is arranged according to size and is then conducted to the fluoroscopic screen. Instructions as to how to behave in front of the screen are issued to the first few subjects, and the rest are asked to imitate these. An automatic phonograph for giving the commands in regard to breathing has even been advised.[23] Each person holds in his hand a small card containing the necessary personal data, which is photographed together with the chest. A single machine is reported to be able to examine from four hundred to six hundred persons in one hour. For interpretation the film is magnified by means of a small projection lamp to an area about 10 cm. square. One picture after another passes in rapid succession in front of the interpreter, who either dictates a very short report or — by simply placing an always ready sheet of photographic paper on the viewing area — makes a photographic copy of the projected enlargement for further study.[28] It is said to be easy for a trained examiner to read five hundred films in one hour, especially if most of the patients are healthy, for example, soldiers. The number is smaller if less healthy persons are examined, for example, factory workmen.[27] Data thus obtained are stored in central files.

The main importance of such serial examinations is believed to lie in the ability to recognize all cases of tuberculosis. Some authors[27, 29] have compared a large series of fluoroscopic screen photographs with routine full-sized roentgenograms of the same patients, and concluded that active tuberculous processes were diagnosed from the screen photograms in almost all cases. This finding is rather unexpected when all authors admit that the detail and contrast of the screen photographs are definitely inferior to those of the routine roentgen films.* It is thought, however, that the examination represents only an extensive filter which helps to discover grossly diseased as well as possibly diseased persons. The qualitative diagnosis can be made only by clinical examination together with a large routine roentgenogram, which should be taken in every case in which disease is found on the screen photographs.

In other words, screen photography as yet does not equal the routine roentgen examination, which

*The definition on the larger-sized photographic films, 75 by 75 mm. or 4 by 5 in., is better than that on the commonly used 24-by-36-mm. photographic film.

includes fluoroscopy, good roentgenograms in various directions and with various exposures, Bucky films and so forth. One danger of the method lies in the possibility that doctors and patients may not appreciate its limitations, thereby creating an unjustified feeling of safety. For example, if a patient has recently had a negative examination by screen photography, a more adequate roentgenological examination may be delayed if he should develop clinical symptoms. It is likely that the technical qualities of the screen photographs will improve in the near future, so that their clinical use may become advisable in many cases. The danger which is inherent in any serial examination will remain unless the incompleteness of such an examination is adequately stressed.

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MASSACHUSETTS MEDICAL SOCIETY

PROCEEDINGS OF THE COUNCIL

Annual Meeting, May 21, 1940

THE annual meeting of the Council of the Massachusetts Medical Society was held in the Swiss Room of the Copley-Plaza Hotel, Boston, on Tuesday, May 21, at 10:30 a. m. The president, Dr. Walter G. Phippen, Essex South, was in the chair, and 261 councilors were present (Appendix No. 1).

The records of the meeting of February 7, 1940, published in the *New England Journal of Medicine,* issue of March 7, 1940, were presented by the Secretary and approved by the Council.

The roll call of the nominating councilors by the Secretary was as follows: W. D. Kinney, Barnstable; W. H. Allen, Bristol North; E. F. Cody, Bristol South; F. W. Snow, Essex North; Horace Poirier, Essex South; F. J. Barnard, Franklin; G. L. Schadt, Hampden; L. N. Durgin, Hampshire; R. R. Stratton, Middlesex East; F. L. Gage, Middlesex North; A. W. Dudley, Middlesex South; D. D. Scannell, Norfolk; W. G. Curtis, Norfolk South; W. H. Pulsifer, Plymouth; R. L. DeNormandie (alternate), Suffolk; R. P. Watkins, Worcester; and C. B. Gay, Worcester North. (There was no representative from the Berkshire district.) The nominating councilors retired to Parlor A for deliberation.

REPORTS OF STANDING COMMITTEES

Membership

The chairman, Dr. H. Quimby Gallupe, Middlesex South, read for the purpose of record the supplementary report of his committee which was omitted at the February meeting but published as a supplementary report in the *New England Journal of Medicine,* issue of March 7, 1940, in connection with the February meeting. This part of the report was accepted and the recommendations adopted by the Council.

Dr. Gallupe then proceeded with the reading of the current report (Appendix No. 2). The

committee recommended that eight fellows be allowed to retire, five be allowed to resign, three be allowed to have their dues remitted, nine be allowed to change their districts without change of legal residence, and two be recommended for affiliate fellowship in the American Medical Association. The report was accepted, and the recommendations adopted.

Ethics and Discipline

The report (Appendix No. 3) was presented by the chairman, Dr. Robert L. DeNormandie, Suffolk.

In response to a question by Dr. Norman A. Welch, Norfolk, the President stated that the formal complaint made in February concerning certain fellows of the Society was still in committee. The report was accepted by vote of the Council.

Medical Education and Medical Diplomas

The report (Appendix No. 4) was presented by the chairman, Dr. Reginald Fitz, Suffolk, and was duly accepted.

Dr. Fitz then introduced a recommendation from the committee that the Committee on Medical Education and Medical Diplomas be directed to redraft Section 5 of Chapter VII of the by-laws and to report at the next meeting of the Council.

The Secretary suggested that the recommendation be somewhat more inclusive and include the phrase "and such other by-laws as may apply." The suggestion was accepted by Dr. Fitz. The altered recommendation was duly passed by the Council.

State and National Legislation

The report was presented by the chairman, Dr. E. Lester Merritt, Bristol South. This being an off season, with regard to state legislation, there were no local matters to report. The committee met on May 15 to discuss certain bills now before Congress. The committee recommended that House Bill 8963, introduced by Representative Toland, of California, be opposed. This bill would give to chiropractors the right to treat injured federal employees who are entitled to benefits under the United States Employees' Conference Act. The hearing was scheduled for May 22. The Council voted to approve of a telegraphic protest to the Judiciary Subcommittee in the name of the Society. The report was accepted.

Medical Defense

The chairman, Dr. Arthur W. Allen, Suffolk, presented the report of the committee (Appendix No. 5). The Council voted to accept it.

REPORTS OF SPECIAL COMMITTEES

Postgraduate Instruction

The report (Appendix No. 6) was presented by the chairman, Dr. Frank R. Ober, Suffolk, and was accepted by the Council.

The Council approved of the recommendation that the committee be continued.

Physical Therapy

The report (Appendix No. 7) was presented by the chairman, Dr. Franklin P. Lowry, Middlesex South, and was duly accepted.

Industrial Health

The report (Appendix No. 8) was presented by Dr. Louis R. Daniels, Middlesex South, and was accepted by vote of the Council.

Public Relations

The report (Appendix No. 9) was presented by the secretary of the committee, Dr. Elmer S. Bagnall, Essex North.

Paragraph 1 of the report was accepted and approved.

Paragraph 2 was accepted and the recommendations approved. Under the by-laws, the request for an appropriation of $150 was referred to the Committee on Financial Planning and Budget.

In connection with Paragraph 3, Dr. Thomas H. Lanman, Suffolk, chairman of the special committee appointed by the President to study medical-costs insurance plans, was asked to present his report, which was made a part of the report of the Committee on Public Relations.

The Committee on Public Relations made the following recommendations:

Any plan for prepaid medical care, sponsored by the Massachusetts Medical Society, should meet the following five requirements:

1. That it be on a voluntary basis and available to those with low or moderate incomes.
2. That it include the subscriber's free choice of physician.
3. That the Massachusetts Medical Society have supervisory control through the properly appointed general and local committees.
4. That it comply with the laws governing insurance in this state.
5. That the education of the public regarding such plans be left insofar as possible to the physician and his individual patient of the individual locality, but working with and under a special committee duly appointed by the state society.

This portion of the report was duly accepted. There was some discussion regarding the phrase

"free choice of physician." Dr. Lincoln Davis, Suffolk, was of the opinion that the phrase sounded well, but its inclusion would make it difficult to maintain standards of practice. Dr. Brainard F. Conley, Middlesex South, was of the opinion that the recommendation made was important in that it encouraged a continuation of doctor-patient relations. Dr. Merritt agreed with Dr. Conley. Dr. Welch pointed out that legally the only method of qualifying men to practice medicine rests with the Board of Registration in Medicine.

After some further discussion, the Council moved to adopt the recommendations of the Committee on Public Relations. It was then voted to accept the report of the committee as a whole.

Restoration to Fellowship

Restoration to fellowship, with the usual provision regarding payment of dues, was authorized by the Council for the following four former members:

Lionel M. Cole, Pittsfield (Committee: Maurice S. Eisner, Garvey Adeson and George M. Shipton).

Paul R. Donovan, Revere (Committee: Earle M. Chapman, Harold L. Musgrave and George L. Gately).

H. R. Record, Quincy (Committee: Cornelius J. Lynch, Cornelius A. Sullivan and William J. McCausland).

Frank J. Vaccaro, Pittsfield (Committee: Henry H. Bard, Newall N. Copeland and Modestino Crisciotiello).

Restoration to fellowship was not recommended for the following former member:

Roland O. Parris, Falmouth (Committee: John I. B. Vail, John P. Nickerson and Julius G. Kelley).

Nominating Committee

Dr. Edmond F. Cody, Bristol South, reported for the Nominating Committee the following nominations for office:

For president: Walter G. Phippen, Salem.
For vice-president: Frank R. Ober, Boston.
For secretary: Alexander S. Begg, West Roxbury.
For treasurer: Charles S. Butler, Boston.
For orator: A. Warren Stearns, Billerica.

There being no further nominations, it was voted that nominations cease and that the Secretary be directed to cast one ballot for the officers nominated by the committee. The Secretary announced that he had cast the ballot and that the officers were duly elected.

APPOINTMENTS OF COMMITTEES

The President then proceeded to announce his nominations for appointment to the various standing and special committees. (These committees will be published with the proceedings of the Society in the July 4, 1940 issue of the *Journal*.) The list of appointments was duly approved by the Council.

The following committees were approved by the Council to consider the petitions for restoration to fellowship of the following six former members:

For Julian C. Gant, Arlington:
Edwin P. Stickney, Alfred Weller and Letitia D. Adams.

For Edward J. Kelley, Watertown:
Albert B. Toppan, Pericles Canzanelli and Eugene F. Gorman.

For Burton E. Lovesey, Roslindale:
Guy F. Blood, John F. Ford and John J. Elliott.

For Julian D. Lucas, Brookline:
Edward L. Kickham, Frederick J. Bailey and Maurice Gerstein.

For Joseph Rosenthal, Roxbury:
Sidney H. Weiner, Hyman Morrison and Joseph Laserson.

For Louis F. Salerno, East Boston:
Harvey A. Kelly, George H. Schwartz and Raymond B. Parker.

INCIDENTAL BUSINESS

The application of Dr. Thurlow H. Pelton, of Pittsfield, was received at headquarters too late to be included in the list of applicants published in the *Journal*. He appeared before the Board of Censors and was duly examined and passed. The Council approved of the action taken.

The Council voted to approve the action of the Board of Censors of Middlesex South District in giving a postponed examination to Dr. Alan R. Moritz who did not receive official notification of the regular meeting.

The Council voted to approve the President's appointment of Dr. Ernest L. Hunt, Worcester, as alternate delegate to the House of Delegates of the American Medical Association, to take the place of Dr. Arthur W. Marsh.

The Secretary called attention to the necessity for the councilors to sign the attendance books. Reports of attendance by councilors are compiled from these books and supplied to the various district societies. The nominating committees of the district societies frequently are influenced, in their choice of councilors, by these reports.

The meeting adjourned at 11:55 a.m.

ALEXANDER S. BEGG, *Secretary*.

APPENDIX NO. 1

ATTENDANCE

BARNSTABLE
O. S. Simpson
M. E. Champion
W. D. Kinney

BERKSHIRE
J. J. Boland
I. S. F. Dodd
P. J. Sullivan

BRISTOL NORTH
W. H. Allen
F. H. Dunbar
J. L. Murphy
W. H. Swift

BRISTOL SOUTH
H. E. Perry
G. W. Blood
R. B. Butler
E. F. Cody
J. A. Fournier
E. D. Gardner
E. L. Merritt
I. N. Tilden
P. E. Truesdale

ESSEX NORTH
R. C. Norris
E. S. Bagnall
R. V. Baketel
C. S. Benson
E. H. Ganley
H. R. Kurth
P. J. Look
L. C. Peirce
G. L. Richardson
F. W. Snow
T. N. Stone
C. A. Weiss

ESSEX SOUTH
Loring Grimes
H. A. Boyle
N. P. Breed
C. L. Curtis
J. F. Donaldson
R. E. Foss
S. E. Golden
P. P. Johnson
J. F. Jordan
A. E. Parkhurst
W. G. Phippen
Horace Poirier
E. D. Reynolds
J. R. Shaughnessy
J. W. Trask
C. F. Twomey

FRANKLIN
A. H. Wright
F. J. Barnard
A. H. Ellis
W. J. Pelletier

HAMPDEN
F. H. Allen
T. S. Bacon
W. C. Barnes
J. M. Birnie
W. A. R. Chapin
J. L. Chereskin
E. C. Dubois
P. E. Gear
Frederic Hagler
E. A. Knowlton
M. W. Pearson
A. G. Rice
G. L. Schadt
G. L. Steele

HAMPSHIRE
A. J. Bonneville
J. D. Collins
L. N. Durgin

MIDDLESEX EAST
G. R. Murphy
J. H. Blaisdell
Richard Dutton
E. M. Halligan
J. H. Kerrigan
K. L. Maclachlan
R. W. Sheehy
R. R. Stratton

MIDDLESEX NORTH
R. L. Drapeau
D. J. Ellison
F. L. Gage
A. R. Gardner
G. A. Leahey
E. O. Tabor
M. A. Tighe

MIDDLESEX SOUTH
Dwight O'Hara
C. F. Atwood
E. W. Barron
W. B. Bartlett
Harris Bass
E. H. Bigelow
G. F. H. Bowers
R. W. Buck
E. J. Butler
Richard Collins, Jr.
B. F. Conley
P. A. Consales
D. F. Cummings
C. H. Dalton
L. R. Daniels*
H. F. Day
C. L. Derick
J. E. Dodd
A. W. Dudley
E. R. Fleming
H. Q. Gallupe
F. W. Gay
H. G. Giddings
H. W. Godfrey
B. I. Goldberg
A. D. Guthrie
A. M. Jackson
A. A. Levi
F. P. Lowry
A. N. Makechnie
R. A. McCarty
J. A. McLean
Edward Mellus
J. C. Merriam
C. E. Mongan
J. P. Nelligan
E. J. O'Brien
Max Ritvo
E. S. A. Robinson
E. F. Ryan
M. J. Schlesinger
W. N. Secord
J. W. Sever
E. F. Sewall
E. W. Small
H. P. Stevens
R. A. Taylor
H. W. Thayer
J. H. Townsend
R. H. Wells
Hovhannes Zovickian

NORFOLK
F. P. McCarthy
J. D. Adams
J. R. Barry
Carl Bearse
A. S. Begg
M. I. Berman
F. S. Cruickshank
William Dameshek
F. P. Denny
G. L. Doherty
D. G. Eldridge
J. J. Elliott
H. M. Emmons
J. C. V. Fisher
Susannah Friedman
Maurice Gerstein
David Glunts
W. A. Griffin
B. T. Guild
J. B. Hall
R. J. Heffernan
Morris Ingall
I. R. Jankelson
C. J. Kickham
C. J. E. Kickham
E. L. Kickham
D. L. Lionberger
D. S. Luce
D. L. Lynch
T. F. P. Lyons
Charles Malone
F. J. Moran
M. W. O'Connell
Frederick Reis
S. A. Robins
S. M. Saltz
D. D. Scannell
Nathan Sidel
J. W. Spellman
M. H. Spellman
J. P. Treanor, Jr.
W. J. Walton
H. F. R. Watts
N. A. Welch

NORFOLK SOUTH
D. B. Reardon
C. S. Adams
H. H. A. Blyth
R. L. Cook
W. G. Curtis
G. V. Higgins
H. A. Robinson
W. L. Sargent

PLYMOUTH
J. E. Brady
A. L. Duncombe
P. B. Kelly
P. H. Leavitt
R. C. McLeod
G. A. Moore
D. W. Pope
W. H. Pulsifer
F. F. Weiner

SUFFOLK
A. A. Hornor
A. W. Allen
W. J. Brickley
W. E. Browne
C. S. Butler
E. M. Chapman
David Cheever
M. H. Clifford
Lincoln Davis
R. L. DeNormandie
N. W. Faxon
G. B. Fenwick
Reginald Fitz
Channing Frothingham
M. N. Fulton
Joseph Garland
John Homans
Rudolph Jacoby
H. A. Kelly
T. H. Lanman
R. I. Lee
C. C. Lund
G. R. Minot
W. J. Mixter
J. P. Monks
Donald Munro
H. L. Musgrave
R. N. Nye
F. R. Ober
J. P. O'Hare
L. E. Parkins
L. E. Phaneuf
Helen S. Pittman
G. C. Shattuck
R. M. Smith
M. C. Sosman
Augustus Thorndike, Jr.
E. F. Timmins
S. N. Vose
Shields Warren
Conrad Wesselhoeft
C. F. Wilinsky

WORCESTER
J. M. Melick
J. C. Austin
Gordon Berry
W. P. Bowers
L. R. Bragg
P. H. Cook
G. E. Emery
J. M. Fallon
J. J. Goodwin
E. L. Hunt
E. R. Leib
J. C. McCann
J. W. O'Connor
C. A. Sparrow
G. C. Tully
R. J. Ward
F. H. Washburn
R. P. Watkins

WORCESTER NORTH
B. P. Sweeney
E. A. Adams
H. C. Arey
J. J. Curley
T. R. Donovan
C. B. Gay
J. C. Hales

Total 261

*By invitation.

Knowlton, Wilson W., Waltham
Marshall, Samuel F., West Newton

From Norfolk to Middlesex South

Loizeaux, Marion C., Wellesley

From Norfolk to Suffolk

Butler, Alice E., Wellesley
Ferguson, Charles F., Wellesley
Harvey, Earle A., Brookline
Salter, William T., Milton

From Norfolk to Worcester

Brown, Bessie F., Wrentham

H. QUIMBY GALLUPE, *Chairman.*

APPENDIX NO. 2

REPORT OF THE COMMITTEE ON MEMBERSHIP

The committee recommends:

1. That the following named eight fellows be allowed to retire under the provisions of Chapter I, Section 5, of the by-laws:

Blanchette, William H., Fall River
Doucett, Frederick L., East Weymouth
Leach, Albert C., Orange
Park, Francis E., Stoneham
Patterson, Alice M., Marblehead, with remission of dues for 1940
Pothier, Joseph C., New Bedford, with remission of dues for 1940
Potter, Lester F., New Bedford
Starbird, Edward P., Dorchester, with remission of dues for 1940

2. That the following named five fellows be allowed to resign under the provisions of Chapter I, Section 7, of the by-laws:

Bushold, Fred G., Hampton, New Hampshire, with remission of dues for 1940
Durant, Richard C., Honolulu, Hawaii
Shain, Joseph H., Boston, with remission of dues for 1938, 1939 and 1940
Teel, Harold M., Polson, Montana, with remission of dues for 1940
Wattles, Merrill, Palatka, Florida

3. That the following named two retired fellows be recommended for affiliate fellowship in the American Medical Association:

MacCarthy, Francis H., Gilford, New Hampshire
Starbird, Edward P., Dorchester

4. That the dues of the following named three fellows be remitted under the provisions of Chapter I, Section 6, of the by-laws:

Booth, Ernest L., East Boston, 1937, 1938, 1939 and 1940
Campbell, Franklin E., West Medford, 1940
Strongman, Bessie T., Pittsfield, 1940

5. That the following named nine fellows be allowed to change their membership from one district society to another without change of legal residence, under the provisions of Chapter III, Section 3, of the by-laws:

From Middlesex South to Suffolk

Castleman, Benjamin, Belmont

APPENDIX NO. 3

REPORT OF THE COMMITTEE ON ETHICS AND DISCIPLINE

The Committee on Ethics and Discipline has held four long meetings since the last report. Besides these meetings of the whole committee, the secretary and the chairman have answered over the telephone many questions of minor importance. Scarcely a week goes by that some fellow does not appeal for clarification of some point that disturbs him. In the large majority of such appeals, one or the other of the committee usually can straighten out the difficulty and the matter does not come before the whole committee.

Petty publicity causes the committee much annoyance. Letters are constantly received from fellows enclosing photographs of physicians which have appeared in newspapers. In two or three cities, so-called "personality sketches" of doctors have made their appearance. Cards in various church or fair programs, signs several feet long and illuminated, signs with the doctor's name and his specialty, advertisements in local newspapers giving addresses, office hours, telephone numbers and types of work, as well as statements of membership in societies — these are a few of the types of publicity that the committee has attempted to stop. In all cases the physician's attention has been called to the objections to such publicity, and they have given it up. The nuisance, however, persists, and the committee believes that this statement calling the attention of the fellows to such undignified practices may help to put a complete stop to them.

Several complaints against fellows have been made which have been investigated and satisfactorily adjusted.

The committee has given hearings to three fellows, two because of complaints made by patients regarding fees. These were studied and satisfactory adjustments were made. The third hearing was to a fellow charged with incompetent surgery. The various aspects of this case were discussed with the fellow. He was frankly and severely reprimanded by the committee.

When the Medical and Surgical Associates met with the committee, Dr. Phippen presided. The chairman took no part in the presentation of the facts, and was not present during the subsequent discussion by the committee. The committee has the whole problem before it for further consideration.

Several matters are still being investigated on which no final conclusion has been reached.

ROBERT L. DENORMANDIE, *Chairman.*

APPENDIX NO. 4

Report of the Committee on Medical Education and Medical Diplomas

The committee has met twice during the past year. Our chief duty has been to scrutinize diplomas presented by candidates for fellowship who are graduates from foreign medical schools or from schools not recognized by the Society. At our two meetings we have interviewed 104 such candidates. Of such candidates whose diplomas were recognized by the committee, 42 have been passed by the examining censors in the various districts. Thus, of the 245 names added to the roster of the Massachusetts Medical Society since the last annual meeting, 17 per cent are those of graduates of foreign or unrecognized schools.

The problem of the graduate of a foreign medical school or of an unrecognized school continues to be no less baffling now than in previous years. The ordinary doctor licensed to practice medicine in Massachusetts finds that membership in the Massachusetts Medical Society is useful. Membership is particularly useful as a means of opening the door to hospital appointments. It is a rare hospital which will accept on its staff a physician who has not among his credentials our certificate of membership.

On the other hand, medical educators are of the opinion that internships now are an integral part of a doctor's educational program. At the October meeting of the Association of American Medical Colleges, this organization voted that its executive council be authorized to proceed with the formulation of minimum educational standards for acceptable internships and prepare a list of hospitals meeting these standards. Many Massachusetts hospitals wish to train interns and appreciate that unless their staff is sufficiently competent recognition for intern training is unlikely. Thus, your committee finds itself balanced on a precarious perch. On the one hand, we are assailed by fellows who believe that our interpretation of the by-laws is too liberal, and on the other, by doctors who say earnestly that the by-laws, as we have interpreted them, discriminate unfairly against certain licensed practitioners who have every right, under the laws of the Commonwealth, to work without stigma.

Your Committee finds the present by-laws, as they concern our work, not entirely satisfactory. As the number of applicants who appear before us has increased year by year, we have come to serve more as a committee on credentials than for any other purpose, and we believe that the several districts might set up credential committees which could operate locally with greater intelligence than can we. Such subcommittees should be in a better position to obtain truly confidential information concerning candidates than are we and should be of great assistance to us in helping to select the best candidates for membership in the Society from doctors who are graduates of foreign medical schools or of schools not recognized by the Society. Therefore your committee asks for a resolution directing it to re-draft Section 5 of Chapter VII of the by-laws and to report on this matter at the next meeting of the Council.

This year a prize of fifty dollars was again offered for the best written and most comprehensive case report submitted by an intern holding an internship in any Massachusetts hospital approved by the American Medical Association for intern training. This is a valuable means of stimulating better writing and clearer thinking among younger men. The president of the Boston Medical Library, the editor of the *New England Journal of Medicine*, and the chairman of the Committee on Medical Education and Medical Diplomas served as judges. Six case reports were submitted. The prize was awarded to Dr. Victor G. Balboni, a graduate of the Harvard Medical School in 1939, for his case report "Multiple Pulmonary Thrombi Associated with Cyanosis and Right-sided Cardiac Hypertrophy." This case was studied by him while he was an intern in pathology at the Peter Bent Brigham Hospital.

Your committee has followed the postgraduate education program of the Society with much interest. The courses given in the districts and the New England Postgraduate Assembly appeal to us as being efforts in the right direction. This year's program of the annual meeting also appears to us to be of greater educational value than ever before.

Reginald Fitz, *Chairman*,
Archibald R. Gardner,
George D. Henderson,
John P. Monks,
A. Warren Stearns.

APPENDIX NO. 5

Report of the Committee on Medical Defense

During the past year there have been two new cases accepted for defense. In each there is no evidence of malpractice. Both cases will be allowed to come to trial.

Two cases have been disposed of during the past year. One, which came to trial, had a verdict returned by the jury for the defendant. The other case reached trial, but a companion case defended by an insurance company was settled by the company in such a way that the member who was being defended by us was also released as a part of the settlement.

There are at present a total of eight cases pending. There is one threatened lawsuit which probably will not be carried any farther.

The committee believes that the Society should continue to maintain this legal protection against malpractice suits even though a good percentage of the members carry malpractice insurance. The mere fact that the Society will not settle any suit out of court has a definite reaction against the establishment of such suits; this, we believe, to be beneficial to the Society as a whole.

Arthur W. Allen, *Chairman*,
Horatio Rogers, *Secretary*,
Edwin D. Gardner,
Frederick B. Sweet,
William R. Morrison.

APPENDIX NO. 6

Report of the Committee on Postgraduate Instruction

On April 25, 1940, the postgraduate extension courses ended for the academic year 1939–1940. The total enrollment for this year was 984, a gain of 23.7 per cent over the previous year, the enrollment in 1938–1939 being 795. The detailed attendance record is attached. The Society again presented the extension programs in co-operation with the Massachusetts Department of Public Health, the United States Public Health Service and the Federal Children's Bureau. The Department of Public Health has assisted the committee in carrying forward this program of instruction; the committee wishes to thank Dr. Jakmauh, the commissioner of public health, for his co-operation.

Teaching clinics were instituted in Franklin, Berkshire and Bristol counties; these were rated very successful and show that case demonstration and teaching can be done well in any locality where the profession will provide the necessary facilities. The committee hopes that other districts will try this method of teaching.

Clinical teaching was given again this year in gonorrhea and syphilis; at the Boston Dispensary Gonorrhea Clinic, student physicians made forty-nine clinic visits, while at the Massachusetts General Hospital Syphilis Clinic,

ATTENDANCE — POSTGRADUATE EXTENSION COURSES

DISTRICT	PLACE	1938	1939	1940
Barnstable	Hyannis	22	33	23
Berkshire	Pittsfield	55	45	50
Bristol North	Taunton	27	31	20
Bristol South	Fall River	20	36	22
	New Bedford	58	34	34
Essex North	Lawrence	31	48	52
Essex South	Salem	58	54	59
Franklin	Greenfield	28	27	47
Hampden	Holyoke	33	30	40
	Springfield	50	40	100
Hampshire	Northampton	32	30	32
Middlesex East	Melrose	42	21	54
Middlesex North	Lowell	32	21	25
Middlesex South	Cambridge	80	50	80
Norfolk	Norwood	24	(no course)	26
Norfolk South	Quincy	30	25	20
Plymouth	Brockton	37	35	27
Suffolk	Boston	(no course)	180	172
Worcester	Milford	23	20	30
	Worcester	(no course)	(no course)	45
Worcester North	Fitchburg	46	35	26
Totals		708	795	984

student physicians made one hundred and eleven clinic visits. The attendance has dropped from last year but the committee hopes to improve this important phase of postgraduate instruction.

The outline for next year's postgraduate extension program has been made out and a budget presented to the Department of Public Health which will submit it to the government agencies in Washington. It is highly probable that this successful co-operative plan will be continued.

The New England Postgraduate Assembly has been organized for next fall. The assembly will be held in Sanders Theatre and Memorial Hall on Wednesday and Thursday, November 13 and 14, 1940. The speakers will be as follows:

Dr. Fred L. Adair, Chicago (obstetrics and gynecology)
Dr. Henry W. Cave, New York City (gastrointestinal diseases)
Dr. Russell L. Haden, Cleveland (blood diseases)
Dr. Sumner L. Koch, Chicago (trauma and infection)
Dr. Robert F. Loeb, New York City (diabetes)
Dr. T. Grier Miller, Philadelphia (gastroenterology)
Dr. Oliver S. Ormsby, Chicago (dermatology)
Dr. Percy S. Pelouze, Philadelphia (urology)
Dr. Tracy J. Putnam, New York City (neurology)
Dr. Ralph M. Waters, Madison, Wisconsin (anesthesiology)

The detailed program will be printed in the *New England Journal of Medicine* and also mailed to every physician in the sponsoring states next September.

The committee wishes to express to the faculty of the extension courses and teaching clinics the appreciation of the Society for its services in maintaining the high standard of teaching.

The fourth annual meeting of the Associated State Postgraduate Committee will be held on June 12, 1940, in New York City during the meeting of the American Medical Association. The committee recommends that the Society authorize the executive committee to send delegates to this meeting.

The committee wishes to express sympathy to the Medical Society of the State of New York in the death of Dr. Thomas P. Farmer, of Syracuse, who was chairman of its postgraduate committee for many years. He was a pioneer in many phases of postgraduate medical education. Dr. Farmer was vice-chairman of the Associated State Postgraduate Committees and was a champion of progressive educational ideas. He succumbed to the effects of radium used in his professional work over a period of many years.

It is recommended that the committee be continued.

FRANK R. OBER, *Chairman,*
LEROY E. PARKINS, *Secretary.*

APPENDIX NO. 7

REPORT OF THE COMMITTEE ON PHYSICAL THERAPY

During the past year there has been a decidedly increased interest in more adequate undergraduate instruction in physical therapy by medical schools throughout the country. Certain physical therapy methods and principles are now recognized by the medical profession generally as a definite aid in the treatment of various pathologic conditions.

Your committee has for several years attempted to encourage the inclusion of this subject in the curriculums of all the medical schools in this region. The University of Vermont College of Medicine has had definite instruction in this field for four years. Tufts College Medical School began with two hours' instruction a few years ago, and offered eight hours' instruction this year.

A department of physical therapy has recently been started at the Massachusetts General Hospital, and we hope that it will attain the results already achieved by other hospitals of its size and influence in other parts of this country.

This is a helpful sign for future physicians. For those already in practice who wish a practical summary of this subject a cinema has been prepared which demonstrates various methods used in physical therapy. The cinema and speakers may be obtained for medical meetings by communicating with the committee.

FRANKLIN P. LOWRY, *Chairman,*
GEORGE R. MINOT,
ROBERT B. OSGOOD.

APPENDIX NO. 8

REPORT OF THE COMMITTEE ON INDUSTRIAL HEALTH

This committee was first appointed on April 27, 1939, and re-appointed June 13, 1939, to co-operate with the American Medical Association in its program for the advancement of better medical care.

Our field is particularly industrial and we are concentrating on the type of activity which we believe will be

helpful to the doctor who is partly or wholly occupied with industrial problems.

The members of the committee are all connected with industry and also maintain contacts with those organizations best equipped to be of help in carrying out this program. These contacts are as follows:

The Conference Board of Physicians in Industry (National Industrial Conference Board)
The National Association of Manufacturers
The Air Hygiene Foundation of America
The Harvard School of Public Health (Division of Industrial Hygiene)
The Massachusetts Department of Labor and Industries (Division of Industrial Hygiene)
Several insurance companies which provide workman's compensation insurance
A number of individuals especially equipped to advise on industrial medical problems

The committee was represented by two of its members at the second annual Congress on Industrial Health of the American Medical Association at Chicago, January 15 and 16, 1940.

In order to bring the committee to the attention of those whom we are trying to interest, it is our opinion that publication of the committee reports in the *Journal* will help.

Three reports have been so published, and we propose to continue along this line until a more intensive program is determined upon.

Four meetings have been held during the year which have been productive in the way of ideas leading toward this more intensive program.

Requests for advice and assistance have been received and we are trying to render service in all these cases.

W. Irving Clark, *Chairman*,
Louis R. Daniels, *Secretary*,
Noel G. Monroe,
Halstead G. Murray,
Thomas L. Shipman.

APPENDIX NO. 9

Report of the Committee on Public Relations

1. The Committee on Public Relations considered with a representative of the Massachusetts Department of Public Health and Dr. T. Duckett Jones a proposed plan for the inclusion of a program in this state for the care of initial attacks and the follow-up of children under twelve years of age with rheumatic heart disease. Action on this was postponed pending opportunity for its consideration by the district societies.

2. The committee believes that it is highly desirable that a special study be conducted looking toward better understanding between the profession and the authorized agencies involved in the administration of tax-supported medical care in Massachusetts and urges the adoption of the following recommendation:

That the Council authorize the President to appoint a special committee, sufficiently large to be representative of the State, to make a study of tax-supported medical care in Massachusetts, enlisting the co-operation of state, city and town, welfare, old age and veterans' relief administrators and looking toward better standards of care and better mutual understanding of problems of the physicians and of the public agencies.

That the Council appropriate $150 for the expenses incident to this study.

And that this special committee report to the Council through the Committee on Public Relations.

3. The Committee on Public Relations submits and endorses the report of the special committee appointed by the President at the last meeting of the Council for the study of medical-costs insurance plans. [Dr. Lanman, chairman of this special committee, then read his report.]

This committee has studied carefully the problem of how the Massachusetts Medical Society can best carry out the vote of the Council of April, 1939, to wit: "Voted, that the Massachusetts Medical Society take the initiative in the formation of a corporation, non-profit in character, which shall seek to pay the medical-care costs of patients." The present duty of this committee is primarily to build a solid foundation on which the detailed structure of such a plan can rest. The foundation must be such that it will merit and receive the wholehearted co-operation of the members of the Society. This committee cannot, and we believe should not, attempt at this time to present complete and detailed plans. It should leave the way open for changes and modifications in the detailed applications of this plan that may appear desirable and for which experience may show the need. It is obvious that the problems of various individual localities are different. No one plan can cover effectively the divergent needs of the rural community of the State, the small industrial community and the metropolitan center. Any such plan to be effective will require a great deal of further time and effort. The present plan recently put in effect in the State of Michigan is the result of ten years of careful study and the expenditure of over $30,000 of the society's funds. For the development of these details, however, we have the advantage of the study of the plans of other states, notably those of Michigan and New Jersey. The plans for the superstructure must be flexible. The foundation must be firm and secure. The committee takes cognizance of the fact that the Society has already instructed this committee to proceed with drafting and submitting to the Legislature a proper enabling act which, if passed, will permit such a plan to operate.

This report discusses five fundamental points which are the basis for the five recommendations we offer, namely:

1. Any plan for prepaid medical care or service sponsored by the Massachusetts Medical Society should be on a voluntary basis and should be available to those with low or moderate incomes. The committee is not at this time prepared to express exactly just what limits should be applied in defining low or moderate incomes. The committee at this time asks only that this principle be accepted in abstract.

2. Any plan for prepaid medical care or service should include the subscriber's free choice of physician. This is defined as the choice ordinarily exercised by a patient in the selection of his family physician.

3. The Massachusetts Medical Society should have a supervisory control over any such plan by properly appointed committees, both general and local. The Massachusetts Medical Society under its present charter cannot as a society be made a part of the structure of a plan for prepaid medical care.

4. Any such plan for prepaid medical care or service should comply with the laws governing insurance in this state. For this, four conditions must be met.

a. An enabling act of the Legislature.

b. Adequate public control by lay and professional groups, the professional groups to be chosen by the Society.

c. A non-profit basis of operation.

d. Exemption of taxes, both federal and state.

Nothing in the above conditions, however, is to be construed as being in conflict with the service offered by any insurance company legally chartered to do business in Massachusetts.

It is pertinent to point out that the present plan of the Medical Society of New Jersey was at first not incorporated under the State Commissioner of Banking and Insurance. In spite of legal opinion that such a plan was not insurance, it seemed wiser not only as regards the state society but also as regards protection to the subscriber that its plan be incorporated so as to meet the requirements of the state insurance laws.

5. Any plan for prepaid medical care or service for the income groups under consideration involves the education of the public regarding its benefits. This is properly the duty of the family physician, and also requires the creation of a special committee to deal with the public, particularly as regards solicitation of subscribers.

Only these five principles are presented at this time. Further details, particularly those relating to plans for the enabling act of the Legislature will, of course, be presented to the Council for its approval as this study progresses.

We believe the adoption of these five general and broad principles will serve to establish a foundation for a plan that will operate justly, wisely and in the best interests of the profession and the public.

THOMAS H. LANMAN, *Chairman.*

The Committee on Public Relations recommends to the Council the adoption of the following principles:

We recommend that any plan for prepaid medical care sponsored by the Massachusetts Medical Society should meet these five requirements:

1. That it be on a voluntary basis and available to those with low or moderate incomes.
2. That it include the subscriber's free choice of physician.
3. That the Massachusetts Medical Society have supervisory control through the properly appointed general and local committees.
4. That it comply with the laws governing insurance in this State.
5. That the education of the public regarding such plan be left, insofar as possible, to the physician and his individual patient of the individual locality, but working with and under a special committee duly appointed by the Society.

The attention of the Council is invited to the fact that this special committee has already been instructed to endeavor to carry out the vote of the Council of April, 1939, namely, that the Massachusetts Medical Society take the initiative in the formation of a corporation, non-profit in character, which shall seek the procurement of enabling legislation at the next session of the Legislature.

The attention of the Council is invited to the fact that the Medical Society of the District of Columbia after thorough investigation has postponed indefinitely the operation of its tentative plan for medical-costs insurance, because of insufficient demand by the people at this time for this kind of service.

The Council will also be interested in the fact that the State of Connecticut and some other states have procured enabling legislation but have not yet initiated the service. It will be recognized that careful study and observation of existing and proposed similar plans will be necessary before we can undertake anything in this field, and that the Council will be informed and asked to endorse the enabling legislation and any proposed plans before they are submitted to the Legislature or to the people.

E. S. BAGNALL, *Secretary.*

CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

ANTEMORTEM AND POSTMORTEM RECORDS AS USED IN WEEKLY CLINICOPATHOLOGICAL EXERCISES

FOUNDED BY RICHARD C. CABOT

TRACY B. MALLORY, M.D., *Editor*

CASE 26251

PRESENTATION OF CASE

A twenty-one-year-old soda-fountain clerk was admitted to the hospital complaining of lower abdominal cramps of five days' duration.

The history was obtained chiefly from the patient's parents as he was too ill to give a coherent account.

The patient had been well until one year before admission when he had a night-long attack of severe, cramp-like, lower abdominal pain, without diarrhea, which cleared within some twenty-four hours and required no medical attention. The patient had appeared to be pale and tired for one month before admission. This was attributed to late working hours and poor eating habits. He seemed otherwise well until five nights before entry when, at 3:00 a.m., he suddenly experienced severe, cramp-like, lower abdominal pain. The type of pain was said to have reminded the patient's mother of the illness of another of her sons who had had a "ruptured appendix." The cramps persisted intermittently through the night. They were diffuse and low in the abdomen without definite localization. A physician was called that morning, and he stated that the illness was not acute appendicitis. The temperature was 100.2°F. A soapsuds enema was given with good results and the passage of much flatus. The pains, however, continued; he became nauseated and vomited immediately afterward. The cramps increased in severity during the remainder of the day, but nevertheless he managed to sleep well. Four days before admission his temperature was 99°F. His food intake was limited to fluids. In the afternoon of this day the pain and temperature elevation returned. At 6 p.m. he experienced his first shaking chill, which lasted some fifteen minutes. He was slightly disoriented, and the temperature rose to 103°F. His physician referred him to an outside hospital where, during the next three days, the patient had three more shaking chills associated with mild delirium; the last episode occurred twelve hours before admission to this hospital. Throughout this interval the bowel movements were loose, but there was no real diarrhea. The pain became steadier, and there seemed to be a questionable localization of its point of maximum intensity in the right lower quadrant of the abdomen. He was seen in consultation by another physician who referred him to this hospital for further diagnostic studies. There had been almost complete anorexia throughout the entire illness. There had been no known exposure to a contaminated water or milk supply. He was an "extra hand" in a large drugstore and took many meals there. None of his relatives or friends had experienced a similar illness.

The remaining family and past histories were non-contributory.

Physical examination revealed a remarkably pale, sick-looking, thin, flat-chested man who complained of severe abdominal pain. He had a doughy, slightly distended, slightly tympanitic, tender abdomen, with maximal tenderness to deep palpation located in the right lower quadrant. Rebound tenderness was referred to the same region. No costovertebral tenderness was elicited. The liver and spleen were not felt. Peristaltic sounds were high-pitched and active. On fixing the ileopsoas muscles, motions of the legs caused greater pain in the right abdomen than in the left. The rectal examination was negative, and the heart, lungs and extremities were normal.

The temperature was 105°F. (a few minutes after a chill), the pulse 90, and the respirations 20.

Examination of the blood revealed a red-cell count of 4,800,000 with 88 per cent hemoglobin, and a white-cell count of 9700 with 82 per cent polymorphonuclears. The urine was negative. The corrected sedimentation rate of the blood was 0.8 mm. per minute. The hematocrit was 41 per cent. A blood culture showed no growth. The serum van den Bergh was 1.0 to 1.5 mg. per 100 cc., with a biphasic reaction.

The patient developed tenderness over the liver edge, and the organ slowly enlarged. He continued to run a high spiking temperature with frequent chills. Jaundice appeared and gradually increased. He was given intravenous sulfapyridine to a blood level of 6.2 mg. per 100 cc., but because of the obvious gravity of his illness and the steadily increasing symptoms, he was operated on during the fifth hospital day.

DIFFERENTIAL DIAGNOSIS

DR. GREENE FITZHUGH: It seems to me that this was probably a surgical condition; I wonder why he was not operated on before. He could not

have had so much in the way of physical signs in the other hospital as he had here.

In summary, there is a five-day story before he came to this hospital of cramp-like lower abdominal pain. A year previously he had had a similar attack which lasted twenty-four hours. On the second day of his illness he had a shaking chill with a temperature of 103°F. On the fourth day he was sent to an outside hospital where he had a daily chill and the pain became localized in the right lower quadrant. I should say it was an excellent story for acute appendicitis followed by pylephlebitis. I assume the diagnosis could not be made early because it was a retrocecal appendix, and no spasm or tenderness was felt over the abdomen until the illness had progressed for several days. The most important finding against my diagnosis is the white-cell count of 9700 — usually there is quite a high count with pylephlebitis. I believe that all the other conditions that ought to be considered are likewise surgical. I do not know of any medical condition that gives this picture. Did this case end in death or did it not?

DR. TRACY B. MALLORY: We have chosen to stop the history at the operation.

DR. FITZHUGH: I assume that it did. Of course if it did not end in death that would almost rule out the diagnosis of pylephlebitis. Assuming it did not end in death, catarrhal jaundice should be considered and might give a white-cell count like this; however, I never saw a case with as many shaking chills as this one had. The liver in catarrhal jaundice usually does not enlarge with such rapidity as it did in this case.

Should we consider regional ileitis? A very rare case starts out, as one of acute appendicitis does, with symptoms of right lower-quadrant pain. That would be so rare that I should not like to give it any serious consideration. A gastrointestinal series would help with the diagnosis. A Meckel's diverticulum ought to give symptoms of intestinal obstruction with a good deal more vomiting than he had. Should we consider intussusception? That also leads to more vomiting, and one would expect several small bloody movements, which he did not have. He probably also would have had more severe pain.

Should we consider gallstones? One can have gallstones at twenty-one, but it is an unlikely diagnosis. Furthermore, it is very rare to have pylephlebitis after cholecystitis. The story was one of lower abdominal pain, which ought to put the lesion in the region of the appendix or the cecum, because with pain referred below the umbilicus there ought to be a lesion of the large intestine. I do not believe he had pancreatitis because in such cases the pain is usually localized in the epigastrium, radiates through to the back, and is steady and excruciating, with more vomiting and shock than he had. About half the cases of pylephlebitis follow appendicitis. A rare case follows gastric or duodenal ulcer, and a few are secondary to ischiorectal abscess, pancreatitis, cholecystitis and abscess of the spleen. I do not believe they are worth considering seriously.

This young man was not operated on for several days because his physical signs and laboratory findings were obscure. They fit in best with a diagnosis of acute appendicitis followed by pylephlebitis, in spite of the low white-cell count.

DR. MALLORY: Do any surgeons care to comment, or other medical men?

DR. MILTON H. CLIFFORD: After the Chicago amebic dysentery epidemic were there not a number of liver abscesses not dissimilar to this case?

DR. WYMAN RICHARDSON: I remember one that was similar to this case; however, I should hate to make that diagnosis here. I agree with Dr. Fitzhugh.

DR. LELAND S. MCKITTRICK: Dr. Fitzhugh has made this so easy that it is rather embarrassing to some of us surgeons. It must be particularly embarrassing to a most highly respected member of our surgical staff who sent the patient in as a typhoid case because of the fever, low pulse and low white-cell count, and one wonders if the problem was as difficult as we made it out. He entered the Emergency Ward and went on the medical service, so apparently the diagnosis was not obvious to the members of the hospital staff who saw him on admission. The diagnosis given by Dr. Fitzhugh is the diagnosis which was made after his admission to the hospital, and I think he has gone right to the point very clearly and very well. I should like to bring out one point in relation to early diagnosis. I saw him the morning after his admission, and I defy anyone to have made an accurate diagnosis of appendicitis on the physical findings which he presented that morning. Save for abdominal distention, his physical findings were as nearly zero, so far as the abdominal and rectal examinations were concerned, as is possible. I bring that out because I think it is of utmost importance to be as decisive and conclusive as Dr. Fitzhugh has been on slight evidence, and that evidence, I think, is covered by him when he said, "I do not know of any medical condition that gives this picture." The early diagnosis and early treatment of this group of cases must be based on the history of the chills and fever, a little abdominal pain and most in-

definite findings in the absence of any other explanation.

Would you like me to go farther and say what we found?

DR. MALLORY: If you had seen this patient within the first twenty-four hours of the illness, do you think you would have operated at that time?

DR. MCKITTRICK: I think I should have, simply because I had seen one similar case before. An early operation would have made a great deal of difference.

There have been reported in the past year three or four cases of apparent pylephlebitis which have been cured by chemotherapy.* I put that in because Dr. Fitzhugh was going to base so much of his diagnosis on fatal termination, and also in partial justification of the treatment that was carriod out on this young man after the diagnosis had been made. I think that is of importance because there has been a great deal written about the value of ligation of the ileocolic vein in the early stages of pylephlebitis. There are reported cases in which this procedure seems to have given dramatic results. It was advocated for this patient.

DR. MALLORY: Do you want to describe the operative findings?

DR. MCKITTRICK: We operated and found a thrombosed cord along the course of what we interpreted as being the ileocolic vein. It is of significance that when that was done, approximately nine days after onset, this cord, which was at least 5 mm. in diameter, was nonpulsating and we could not identify the artery. There were marked edema of the mesentery and enlargement of the lymph nodes, both of which obscured the anatomic landmarks. We could feel only this inflammatory cord running along the course of the vessels and were unwilling to ligate it without identifying the artery. We were unable to feel pulsation. We finally identified it as the artery by opening it but did not have the courage to ligate both artery and attached vein; we stopped the operation at that point, after taking out the appendix. The appendix was gangrenous.

There is one other point of importance. When we first opened the abdomen we were doubtful of the diagnosis. There was no excess of free fluid. The omentum was normal to superficial inspection. The appendix was over the brim of the pelvis, the tip gangrenous, with about a tablespoonful of pus about it.

*_The 1939 Year Book of General Surgery_. Edited by E. A. Graham. 796 pp. Chicago: The Year Book Publishers, 1939. P. 535.

CLINICAL DIAGNOSES

Acute appendicitis with rupture and abscess formation.
Pylephlebitis.
Liver abscesses.

DR. FITZHUGH'S DIAGNOSES

Acute appendicitis.
Pylephlebitis.

ANATOMICAL DIAGNOSES

(Acute appendicitis.)
Phlebitis, right colic and ileocolic veins.
Periphlebitic retroperitoneal abscess.
Liver abscesses, multiple.
Icterus.
Pulmonary edema.
Operative wound: appendectomy.

PATHOLOGICAL DISCUSSION

DR. MALLORY: Following operation nothing dramatic occurred, although the course was steadily downward. An attempt was made to visualize the expected abscesses in the liver by the use of Thorotrast. Dr. Holmes has the films here.

DR. GEORGE W. HOLMES: You can readily see the whole outline of the liver. There are mottled areas of diminished density surrounded by zones of increased density in the liver. Thorotrast is supposed to increase the density in the normal portions of the liver, and if there is an abscess it leaves a dark area on the films, the same thing happening if there are metastatic nodules in the liver. If this does represent abscess formation it would have to be multiple small abscesses. I do not believe this is the normal appearance of the liver following Thorotrast. I should like to add that Thorotrast is a radio-active substance and should never be given except in very doubtful cases or in cases, such as those of advanced cancer, in which life-expectancy is reasonably short.

DR. MCKITTRICK: That was duly considered here, and the material was given with the remote hope that it might show a single abscess rather than multiple ones.

DR. MALLORY: Do you want to describe the terminal course?

DR. MCKITTRICK: He simply became more and more jaundiced and gradually went downhill and died—a picture of sepsis and liver damage.

DR. EUGENE R. SULLIVAN: I might point out in defense of the medical service that Dr. Beckman and I saw this patient in the Emergency Ward and thought he had a ruptured appendix. We treated

him with Ochsnerization from the moment he came into the hospital.

DR. MALLORY: The postmortem examination showed that he did have pylephlebitis and extensive abscess formation in the liver. The abscesses were so numerous and small and so widespread that drainage would have been quite out of the question. The path of the infection was somewhat peculiar. The ileocolic and right colic veins were locally thrombosed, but the thrombosis did not extend to the portal vein. On the other hand, a retroperitoneal abscess was found at approximately what must have been the bed of the appendix, and this had burrowed its way through the leaves of the mesentery up along all the veins. The veins were quite patent but were bathed in collections of pus which extended all the way up along the portal vein to the hilus of the liver. The major evidence of infection at autopsy was outside the veins rather than in them. There was rather marked dilation of the small bowel, and a kink about an adhesive band was demonstrated in the lower ileum, although it was thought that the adhesions were recent and had probably formed since the appendectomy. The liver abscesses contained gas and foul-smelling pus. The lungs showed marked terminal pulmonary edema and nothing else of great significance.

DR. MCKITTRICK: I find it difficult to clear my mind on this question of ligating the ileocolic vein. It has very free anastomoses, and the blood from that area goes back into the portal system, regardless of whether it goes through the ileocolic vein or takes another channel. Therefore, I wonder how important ligation is, and how much benefit actually comes from closing one main avenue of return which is already thrombosed. Have you any thought on that?

DR. MALLORY: I do not see any clear logic behind it.

A PHYSICIAN: In considering the differential diagnosis at the time of admission was not the initial chill weighty evidence against typhoid fever?

DR. RICHARDSON: We had one case of typhoid fever in which the patient had a chill. I think repeated chills would be distinct evidence against it.

DR. CHESTER M. JONES: We have had one or two cases with a single chill. It is very uncommon to have more than one, and that usually comes at the onset, I think.

CASE 26252

PRESENTATION OF CASE

A nineteen-year-old, American-born, married Jewish girl was admitted to the hospital complaining of a gradually enlarging abdomen.

Approximately two and a half years before admission the patient first noted the presence of a steady, dull, somewhat ill-defined aching pain located in the left upper abdomen beneath the rib margins. This discomfort continued, and two years before entry she noticed a lump in the left upper abdomen in the same vicinity in which the pain was arising. She was otherwise well and led a fairly normal life until six months before admission, when she became cognizant that the same quadrant of the abdomen was swelling. It seemed to enlarge to the left and was definitely hard. With the increasing abdominal enlargement the patient experienced mild distress in breathing deeply and complained of a sensation of fullness after the ingestion of moderate-sized meals. The constant pain had many superimposed sharp twinges. There was no vomiting, but for several months there was slight morning nausea. She denied pregnancy and stated that her catamenia had been normal. The last menstrual period had occurred five days before admission, and the one previous to that occurred three and a half weeks before admission, with normal flow and no clots or pain. During her illness there had been no change in weight. She noted an increasing easy fatigability, and because of the abdominal mass, discomfort while walking.

The family, marital and past histories were noncontributory.

Physical examination revealed a healthy-appearing, obese girl. She had a very slight mustache, with stiff but sparse hairs on the chin, hairs on the chest, and a masculine distribution of the pubic hair. Examination of the heart and lungs was negative. The blood pressure was 130 systolic, 100 diastolic. The abdomen was protuberant and slightly asymmetrical, so that the left upper quadrant bulged slightly more than did the right. To palpation, a cystic, smooth ovoid tumor mass was noted, which transmitted a good fluid wave. There was no shifting dullness in the flanks. The tumor moved slightly on respiration. Rectal examination showed a slightly enlarged nulliparous cervix. One examiner averred that the mass seemed to arise from the pelvis, but

stated that there was too much tension for the proper examination of the pelvic organs.

The temperature, pulse and respirations were normal.

Examination of the blood showed a red-cell count of 3,700,000 with 75 per cent hemoglobin, and a white-cell count of 12,600 with 75 per cent polymorphonuclears; the smear was essentially normal. The stools were negative for occult blood. A blood Hinton test was negative. The serum nonprotein nitrogen and serum protein were normal. A sugar tolerance test showed the following findings: fasting, 74 mg. per 100 cc.; thirty minutes, 176 mg.; one hour, 167 mg.; two hours, 77 mg. Urine examinations showed specific gravities of 1.018 to 1.028, 0 to ++ albumin and 5 to 10 white blood cells per high-power field. A urine culture showed a moderate growth of non-hemolytic streptococci. The vital capacity was 3250 cc.

Roentgenograms of the abdomen revealed an unusually large soft-tissue mass completely filling the upper abdomen and extending downward to the level of the lower border of the left sacroiliac joint. The margins of this mass were smoothly rounded and sharply defined. Intravenous pyelograms showed that the dye appeared promptly on the right side and that the right pelvis and calyces were normal. On the left in one of the films there was a small quantity of dye visualized in a region that probably represented the pelvis of a normal left kidney. Retrograde pyelograms showed normal-sized kidney pelves. The calyces were incompletely demonstrated. The left kidney was displaced downward. All the visible bones appeared definitely older than those indicated by the patient's age. This was particularly true in regard to the lowar lumbar vertebrae, which showed wavy configurations of their surfaces. All the visible epiphyses were closed. A chest plate revealed high diaphragms, which were regular in outline. The lung fields were clear. The heart was normal in size and shape. There was no evidence of metastases. By fluoroscopy the left diaphragm was seen to move poorly, while the right diaphragm showed fair motion. A swallow of barium with fluoroscopic observations showed that the stomach and small intestines were markedly displaced to the right and posteriorly by the huge mass. A barium enema revealed that the splenic flexure was markedly displaced downward by the tumor mass, the transverse colon running along the lower edge of the tumor. The hepatic flexure was not displaced.

The patient was studied extensively. Except for the presence of the abdominal mass she was asymptomatic. A 17-ketosteroid determination was normal (9 mg. per 100 cc.). An operation was performed on the fourteenth hospital day.

Differential Diagnosis

Dr. Alfred Kranes: The problem here is to guess the localization and nature of this large abdominal tumor. The history is helpful in some respects but is non-contributory, for the most part, since the symptoms are essentially those of pressure from an enlarging abdominal mass, most of her discomfort being due either to pressure on the surrounding organs or to the effects of gravity on the tumor. The history may be of importance in helping us to localize this tumor, since the early symptoms were confined to the left upper quadrant, and it is fair to assume that the tumor originated in that locality. It probably was present for a good deal longer than two years because by the time patients notice abdominal lumps they usually are quite large and fairly well advanced, probably having been present for a long time.

Physical examination is helpful, chiefly because it tells us that this mass was apparently cystic, an observation which I think we shall have to take quite seriously. Furthermore, a fluid wave was felt which, if correct, — and I think we have to assume that it was, — confirms the cystic nature of the mass and obligingly allows us to leave out of consideration all the solid tumors of the abdomen, thus confining ourselves to the cystic ones. On the law of chances alone it is likely to be cystic because of its size. We have to assume that this was a fairly large mass because of the x-ray description and on account of the history, although there is nothing actually said about its size on physical examination. It apparently fills the left side of the abdomen, but the physical examination says nothing about that. As to the pelvic examination, I do not believe one can tell, once a tumor reaches this size, where it originated. The statement that it seemed to arise from the pelvis one cannot take too seriously. On physical examination, a tumor of this size may seem to arise anywhere in the abdomen. Apparently it must have been felt by pelvic examination, although no statement is made to that effect. If that is so, it is quite a sizable tumor — extending from the left upper quadrant to the pelvis.

The laboratory work is of little help, and I think we shall have to depend to a large extent on what the radiologist tells us.

Dr. Aubrey O. Hampton: I think this is the largest tumor I have ever seen, if it is a tumor. The diaphragm is high on both sides. The mass is so large that the shadow extends beyond this

17-inch film. The left kidney is here. The outline is not very distinct, but the calyces and the kidney pelvis appear normal. There is no pressure on the inner aspect of the kidney.

DR. KRANES: Can you see the outline of the kidney?

DR. HAMPTON: I cannot see it in any of these films, but all the films are not here.

DR. KRANES: I was relying on that a good deal.

DR. HAMPTON: The kidney outline here is very indefinite. I do not know whether you can rely on this shadow, but you can be sure of the fact that the calyces and pelves are normal, and I cannot imagine a tumor of this size primary in the kidney without deformity of the kidney pelvis or calyces. I think you can rule out kidney tumor by x-ray. The fundus of the stomach is on the right side of the abdomen opposite the eleventh rib. The stomach is displaced backward behind the right side of the spine, and in the lateral view the lower margin of the mass slants forward and downward. It is not round. It is more pointed below. I think you can see it in these films.

DR. KRANES: What about the statement that all the bones appeared older than they should?

DR. HAMPTON: That is true. All the epiphyses are closed, and she was only nineteen: they should not be closed until twenty-one.

DR. KRANES: Which epiphyses?

DR. HAMPTON: The epiphyses of the femurs and those of the crests of the iliums.

DR. KRANES: Do you think the dragging caused by the increased weight could have closed them?

DR. HAMPTON: I do not know the significance of those findings in this case.

DR. HORACE K. SOWLES: Is there anything significant about the direction of the displacement of the stomach.

DR. HAMPTON: Yes, the fundus is displaced markedly to the right and backward.

DR. SOWLES: Does that influence the x-ray point of view?

DR. HAMPTON: Yes, it does.

DR. KRANES: In commenting on the physical examination I meant to discuss the implication, brought about by the statements about the hair growth and masculine distribution of pubic hair, that this tumor was having a masculinizing effect. I am inclined to discount that since it seems to me from the description that it is no more than one would expect in many women without detectable endocrine disturbances. There may, of course, be some disordered function which our present methods do not detect, but I cannot be impressed by this little evidence. Furthermore, if this were a masculinizing tumor of some sort, one would expect that the menstrual periods would have been disordered and that the 17-ketosteroid determination would have been elevated.

So far as the differential diagnosis goes, there are not very many cystic tumors of the abdomen which reach this size, so that the diagnostic possibilities are immediately narrowed down. The most probable cystic abdominal tumor in the female is an ovarian cyst; to which, however, there seem to be several serious objections. The first is that the symptoms began in the left upper quadrant. If we pay any attention to the history,—and it seems to me we must,—I cannot see how an ovarian tumor could cause symptoms of this sort in the left upper quadrant even though it may have had a long pedicle. Furthermore, I should expect some menstrual disturbances if this patient had had an ovarian tumor of this size. Another thing I cannot explain on this basis is the downward displacement of the kidney. Could that possibly occur with an ovarian tumor, Dr. Hampton?

DR. HAMPTON: I have seen a retroperitoneal dermoid cyst of the ovary at the kidney level. I do not remember whether it was above or below.

DR. KRANES: What puzzles me is that it is hard to see how an ovarian tumor could displace the kidney downward.

DR. HAMPTON: Nor could it displace the fundus of the stomach.

DR. KRANES: Apparently there is something about the displacement of the stomach that I do not understand.

Another possibility in that location, and with downward displacement of the kidney, is an adrenal tumor. But, I have never seen or heard of an adrenal tumor reaching this size or becoming cystic. If such a tumor does either of these things, I am not familiar with it. Statements about abnormal hair growth do not impress me in trying to support such a diagnosis.

It might be a large dermoid cyst. I do not believe one would get a fluid wave in a dermoid cyst, however. The contents of a dermoid cyst after removal usually solidify; they are liquid in situ, but I do not think one would get a fluid wave. Furthermore, one should, I think, have seen some calcification by x-ray in a dermoid cyst of that size. I cannot exclude it, but because there is no calcification and because of the presence of a fluid wave I think that a dermoid cyst is unlikely.

Dr. Hampton said he could definitely exclude a large cyst of the kidney, so I shall not discuss that any farther.

The two possibilities that I should consider are,

first, a cyst of the spleen and, second, one of the mesentery or omentum. I do not know how to differentiate them, except to say that this patient's symptoms began in the left upper quadrant and that the whole story was essentially confined to that area. It would seem to me that if this were a mesenteric or omental cyst the symptoms would more likely have been in the midpart of the abdomen or lower. The displacement of the splenic flexure and kidney downward is more in keeping with a large cystic tumor originating in the left upper quadrant, most likely in the spleen. As I say, except for the fact that all the symptoms were confined to the left upper quadrant, I do not see

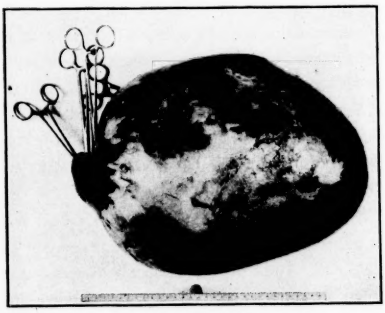

FIGURE 1. *Splenic Cyst.*
The grayish mottled areas on the surface are foci of fibrosis.

how one could distinguish between that and a mesenteric or omental cyst. Because of that fact, however, I shall make a diagnosis of cyst of the spleen.

DR. RICHARD SWEET: I was not impressed by a fluid wave on physical examination, although I did think it was a cystic tumor. Several of the other surgeons were convinced that it was a solid tumor. Having seen with Dr. Daniel F. Jones two other cases of cyst of the spleen, with the absolutely characteristic findings which this girl showed, including those found in the x-ray films and on physical examination of the abdomen, we made a preoperative diagnosis of cyst of the spleen.

On physical examination it was quite obvious to me that the tumor was not ovarian. We could tell that it did not extend into the pelvis but seemed to fill the whole abdomen, obviously rising from beneath the left costal margin. We therefore made a long incision and took the cyst out. In the illustration (Fig. 1) one can see the lower pole of the spleen on the left-hand side where the hemostats are. Beneath that are the vessels of the pedicle. That is the point that Dr. Hampton has been describing. The x-ray films seemed to show that it ended in a rather pointed prominence which slanted down into the abdomen. The vessels of the pedicle were low. After they were freed the cyst came out easily.

CLINICAL DIAGNOSIS

Cyst of the spleen.

DR. KRANES'S DIAGNOSIS

Cyst of the spleen.

ANATOMICAL DIAGNOSIS

Cyst of the spleen.

PATHOLOGICAL DISCUSSION

DR. BENJAMIN CASTLEMAN: This cyst weighed 17 kilograms (38 pounds) and is the largest of the four splenic cysts that we have had here. It was unilocular and filled with hemorrhagic, somewhat chocolate-colored, thin fluid. The splenic tissue was stretched thinly over the cyst, but was otherwise normal. On microscopic examination we could not find any epithelial lining, and from the reports in the literature* only a few show such a lining. Of the other three cysts of the spleen that we have seen, one was a dermoid cyst lined with stratified squamous epithelium; the other two showed contents similar to those in this case and had no epithelial lining, just connective tissue. The etiology of these cysts of the spleen is unsettled: some are angiomatous and are true neoplasms; a few are probably congenital; but most people believe that the large proportion of them are traumatic.

*Fowler, R. H.: Cystic tumors of the spleen. *Internat. Abstr. Surg.* 70:213-225, 1940.

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PROLONGED RESIDENCIES: THEIR EFFECT ON HOSPITALS

The first of the problems raised by prolonged residencies — that of their effect on medical education — was discussed in the June 13 issue of the *Journal*. The second — that of their effect on hospitals and the young physicians who must go through the prolonged and rigorous training — is covered in the following paragraphs; the third — that of their effect on the practice of medicine — will be considered in a subsequent issue.

By enrolling the young medical graduate for five years at such a crucial period of his development the hospitals assume a tremendous responsibility. This period of training must be made a well-rounded educational experience, and clinical duties must be limited sufficiently to make this possible. Practical experience must be supplemented by additional, specialized education in basic science, and if the medical schools fail to co-operate, the hospitals must become little universities in themselves. Few, if any, not directly associated with medical schools are in a position to meet such a demand at the present time. Even with maximal collaboration the brunt of the burden must remain with the hospitals. Since it cannot be too often re-emphasized that nothing will go farther to assure the well-being of the patient than the maximum level of competence in the resident staff, this growing function of the hospital as an educational institution must be called to the attention of the community in order that financial support will be forthcoming. Within the hospitals themselves staff-members and boards of trustees must be convinced of its importance and persuaded to make the sacrifices that will be necessary to make it effective.

When men are held for so long a period on an active service they gain clinical experience at a rapid rate. To be of real developmental value the experience must be coupled with a progressive increase in responsibility and, on the surgical services, with an opportunity to develop increasing technical skill. A greater proportion of operative procedures must go to the residents, and the visiting staff must gradually assume more of a preceptorial attitude and restrict itself sharply to the more difficult procedures. The transition period will be difficult, visiting staffs may begin to seem cumbrously large, and it will be hard to provide fair opportunity for all. The junior visiting staff is particularly in danger of being squeezed out from above and below.

On the financial side the increase in cost to the hospitals will be considerable. Quarters must be enlarged, more men must be fed, and unless resident salaries are appreciably increased, some of the most promising men will be automatically eliminated. Provision for married residents should be most seriously considered.

Still more difficult is the problem of financing

the men during periods when they have no clinical responsibilities; that is, when they are extending their acquaintance with bacteriology, pathology or biochemistry. They will be too numerous and their periods of availability will be too short to make them serviceable to the routine hospital laboratories, which are already only too often overcrowded. They will require active tutorial supervision, and funds will be needed both to pay the tutors and to provide fellowships for those who could not otherwise manage this essential year.

Because of their necessary relations and responsibilities to the communities that support them, hospitals must give serious consideration to the establishment of basic internships. These should not only be suitable as foundations for further specialized training but also fit the men for general practice. The possibility of properly selecting from students still untested by clinical responsibility the men who will make in five years' time the best surgeons or the best internists is dubious. Moreover, it is also doubtful if at such a period in their careers students should be asked to make a choice that can be revoked only with difficulty. With so-called "straight internships" a start in the wrong direction will be almost prohibitively time-consuming. Yet many of the present leaders in the profession required two or more years of hospital experience before they were able to decide in which branch of medicine they belonged.

One more danger must be cited. With five years' residence in a single institution, with the inevitable selection of the majority of the visiting staff from the products of its own resident system and with the appointment of residents largely limited to the students who have worked on the wards, there is peril of intellectual inbreeding. Even at the sacrifice of considerable administrative convenience, every effort should be made to exchange men with other institutions at all levels of training and experience, in order partially to counteract this tendency.

ROBERT THEODORE GUNTHER AND THE HISTORY OF SCIENCE

Although there have been many historians of medicine and various other branches of science, such as mathematics, few men have devoted their lives to the history of science at a whole. In America the outstanding example is Professor George Sarton, of Harvard University, the author of the scholarly three-volume *Introduction to the History of Science,* now complete up to the fourteenth century, with a final volume nearly ready for the press. In addition, he has edited over thirty volumes of the periodical *Isis,* the leading journal in its field. Sarton's scope knows no bounds in science, for his writings cover all science from astronomy to zoology. His encyclopedic mind can only be compared to those of the great humanists and scholars of the Middle Ages and Renaissance, who took all knowledge as their province. Others, however, have toiled profitably in a narrower field, and such a one was Robert Theodore Gunther, through whose death on March 9 the history of science loses an active worker.

Gunther was the eldest son of a distinguished father, Albert C. L. Gunther, who came to England from Germany on a visit in 1856. He viewed the large but unsystematized collection of zoological material at the British Museum and, expressing the need for organization, was invited to begin work at once. His efforts were so appreciated that he soon was made director of the Zoological Department. He worked in the museum steadily and almost daily from 1856 to 1895; under his supervision the collections more than doubled in size. Gunther became the leading systematic zoologist of his day, recognized throughout the world as eminent in his field. To this great scientist and to Roberta M'Intosh, of St. Andrews, Scotland, a son, Robert, was born, who, in turn, was to distinguish himself in quite another field of science.

Born in 1869, young Gunther was educated at University College in London and later at Mag-

dalen College in Oxford. In the latter institution, as fellow and tutor, he served all his mature years. Oxford became his home, and his work centered around the great university. During the World War he began collecting, cataloguing and photographing the numerous scientific instruments scattered in the various colleges and museums in Oxford. A number of early catalogues were published, but his most enduring work was not inaugurated until 1923, when he published the first of a long series of books on *Early Science in Oxford*. The last, Volume XIII, was issued in 1938. A companion volume, *Early Science in Cambridge,* was issued in 1937; *Early Medical and Biological Science* (1926) was an extract of particular medical interest from the larger series on Oxford. The works were all privately printed for subscribers by the Oxford University Press and are splendid examples of fine typography. The whole series was a monumental accomplishment — factual, detailed, extensively illustrated, scholarly and in every way a credit to the history of science. No detail was too small to be noticed by Gunther, who turned out from the dusty corners of the halls, museums and libraries of Oxford a surprising amount of interesting and informative material. Of particular importance is the printing from manuscript of the *Transactions of the Philosophical Society of Oxford, 1683-1690,* in Volume IV of the Oxford series, Chaucer's *Treatise on the Astrolabe* in Volume V, a facsimile and translation, by K. J Franklin, of the *Tractatus de Corde* by Richard Lower in Volume IX, and numerous works of Robert Hooke, including *Micrographia,* in Volume XIII. Books of particular interest to medical men are, in addition to Lower's *Tractatus de Corde, The Biological Sciences* (Volume III) and *Oxford Colleges and Their Men of Science* (Volume XI). Gunther wrote and edited many other books, including *Early British Botanists, The History of the Daubeny Laboratory, The Architecture of the Hospital of St. John* and a series of smaller volumes entitled *Old Ashmolean Reprints.*

In addition to the books, of which the list given above is not by any means complete, Gunther worked for years to establish a museum in Oxford worthy of the history of science. The natural site was the Old Ashmolean, a beautiful building with a superb portal designed by Christopher Wren. After considerable opposition this building was secured as a permanent science museum, and it now contains the great collection of scientific instruments found in Oxford by Gunther and those given to the university by Lewis Evans. In May, 1927, the building was opened. A fine memorial window was added to commemorate the men of science who were connected with the original foundation of the museum — Tradescant, Plot, Ashmole and Wren.

An admirable chance to display these scientific instruments was taken advantage of by Sir William Osler in the summer of 1919, when he gave his presidential address before the Classical Association at Oxford on "The Old Humanities and the New Science." Gunther spread his treasures before the eyes of the classicists in the picture gallery of the Bodelian Library, and before his friends in quite another field of endeavor, with a light touch Osler dilated on the historical value of these complicated instruments. That he succeeded in interesting the classicists goes without question, but a large share of the success of the exhibit depended on Gunther. A catalogue of the exhibition was issued at the time, and reference to the event was recalled by Harvey Cushing in the American edition of Osler's address, published in 1920.

Gunther, in general, was a lone worker and never a type of individual who could be popular with his fellow men. He wrote and edited almost continuously; most of his books were issued from his own home on Folly Bridge in Oxford. He was, however, a prompt and business-like correspondent, and a loyal friend to all those who saw the value of his work. To others, and there were unfortunately a good many of them, he seemed rather distant and diffident. His name will go down in history as that of a man who made a definite contribution to the history of science, for he unfolded for his contemporaries, and those that will come after them, the history of the development of science in Oxford as no one had done before him.

MEDICAL EPONYM

Carrel-Dakin Solution

Alexis Carrel, of the Rockefeller Institute, and Henry C. Dakin, of the Herter Laboratory, New York City, while working in the laboratories at Compiègne, supported by the Rockefeller Institute for Medical Research and attached to Hospital 21 of the French Army, published the results of their collaboration in 1915. In the *Bulletin de l'Académie de médecine* (**74** [3S]: 361–368, 1915), appears an article entitled "Traitement abortif de l'infection des plaies [The abortive treatment of infected wounds]." The author is given as Alexis Carrel, national correspondent of the Academy of Medicine, with the collaboration of Dakin, Daufresne, Dehelly and Dumas. A description of the technic of the use of this solution is given. A translation of their conclusions is as follows:

> It is thus possible to sterilize infected wounds and to heal them like aseptic wounds. It would seem that the abortive treatment of infection may considerably hasten the healing of an infected wound and prevent the greater part of those complications which cause death, the amputation of extremities and other more or less severe crippling.

Dakin published an article "On the Use of Certain Antiseptic Substances in the Treatment of Infected Wounds" in the *British Medical Journal* (**2**: 318–320, 1915). He gives full directions for preparation of the solution and concludes:

> It has been possible to prepare a simple hypochlorite mixture which maintains approximate neutrality under all conditions, is practically non-irritating, and which, when properly applied, has given most encouraging results in the antiseptic treatment of wounds.

R. W. B.

MASSACHUSETTS MEDICAL SOCIETY

SECTION OF OBSTETRICS AND GYNECOLOGY*

Raymond S. Titus, M.D., *Secretary*
330 Dartmouth Street
Boston

Pyelitis in Pregnancy

Mrs. H., a twenty-eight-year-old primipara, twenty-five weeks pregnant, came into the office on April 10, 1939, complaining of right-sided pain. The right kidney was tender; the temperature was 101°F., the pulse 120. A diagnosis of pyelitis was made, and the patient was advised to enter the hospital.

The family history was negative. The patient's past history included "cystitis," measles and chicken pox. She had undergone a tonsillectomy and an appendectomy. In 1938 she had been hospitalized for three days with a carbuncle. Catamenia began at thirteen, were regular with a twenty-eight-day cycle and lasted three days. The last period was October 16, 1938, making the expected date of confinement July 23. She was first seen in February, 1939, at which time a physical examination was entirely normal.

The patient was admitted to the hospital on April 11, with a temperature of 103°F. and a pulse of 140. On April 12, following a chill, the temperature rose to 105°F. and the pulse to 130. The next day the temperature rose to 105°F. from a low of 98. A catheter specimen showed *Bacillus coli* on culture. Blood examination on April 14 showed a red-cell count of 2,820,000, with 55 per cent hemoglobin. She was started on iron therapy.

On April 15 the urine was macroscopically bloody and an intravenous pyelogram showed that excretion from the right kidney was slow, the best plate occurring two hours after injection. A consultation was held with a urologist. The question of sulfanilamide therapy was raised, but because of the anemia it was thought to be contraindicated. On April 17, when the temperature was coming down—the highest point on that day being 100°F.—and the bloody urine had ceased, a cystoscopy was performed and the right kidney catheterized, a No. 9 catheter being easily placed in the renal pelvis. The bladder was free from inflammation. The residual urine from the right kidney totaled 22 cc. The kidney pelvis was washed out with boric acid solution and left full of the solution. On April 19 the temperature rose to 102°F. but came down to normal eight hours later, where it remained until discharge on April 29. A blood examination on April 28 showed the red-cell count to be 3,690,000, with a hemoglobin of 69 per cent.

The pregnancy from then on was normal and uneventful. There was no recurrence of the pyelitis. The patient was delivered on July 18, and made an uneventful convalescence.

Comment. This case well illustrates the possible severity of an acute attack of pyelonephritis. It also shows the attitude of the consultant toward the use of sufanilamide: in the face of the anemia it was believed unwise to resort to chemotherapy.

*A series of selected case histories by members of the section will be published weekly. Comments and questions by subscribers are solicited and will be discussed by members of the section.

The cystoscopy was done in order not only to wash out the kidney pelvis but also to rule out any bladder disease in the face of occult blood in the urine. It is not correct to claim that the kidney lavage cured this patient. It is perfectly fair to say that it helped her, but one cannot deny that sulfanilamide might have resulted in just as spectacular a recovery.

Occult blood in the urine demands diagnosis. Sometimes the bleeding comes from congestion of the bladder itself. In this case the bladder was normal and the bleeding came from the acute infection in the renal pelvis. If sulfanilamide becomes a household remedy, some cases of renal disease that can be diagnosed only by intravenous pyelograms, cystoscopy and catheterization of the renal pelvis will be overlooked. The striking cures that will be seen following its use must not interfere with consultations with well-trained urologists when hematuria exists.

MISCELLANY

RESPONSIBILITY FOR MEDICAL CARE OF THE INDIGENT SICK

At the 1938 Massachusetts Conference of Social Work the Committee on Next Steps in Medical Care* considered the medical care of the indigent, and adopted the following principles:

1. An indigent person is defined as one unable to provide for himself the ordinary necessities of life (food, shelter, clothing and so forth), including medical care when ill.

2. A medically indigent person is one who is ordinarily self-supporting at a subsistence level but unable to pay for medical care when ill.

3. The committee subscribes to the principle that the medical care of the indigent is a relief problem and that, as such, it is the final responsibility of government. Voluntary hospitals and health agencies should continue to care for members of this group so far as their funds will permit, but to the extent to which voluntary resources are inadequate, medical care for this group should be provided from tax-supported funds.

4. The committee believes that the medical care of the medically indigent is also a relief problem. It believes that medical care of persons in this group is the joint responsibility of voluntary and public agencies and that the decision as to whether the responsibility is private or public should be made in each individual case by mutual agreement after adequate social investigation.

5. The committee further subscribes to the principle that the medical care of persons in the low-income brackets, at or above the level of self-support, is an insurance problem, which may be solved through the development and operation of voluntary prepayment insurance plans. Should the development of such plans not constitute a sufficiently wide or adequate coverage of members of this large group, the alternative may lie in compulsory insurance, similar in operation to unemployment compensation under the Social Security Act.

*The members of the committee are: Frank E. Wing, chairman, Mrs. Selma Bridges, Dr. Allan M. Butler, Edith R. Canterbury, Mary Alma Cotter, Frank Goodhue, Dr. Alton S. Pope, Arthur J. Strawson and Margaret H. Tracy, secretary.

At the conference held on November 8, 1939, the committee restricted its deliberation to the medically indigent, that large group of the population ordinarily self-supporting but unable to pay for medical care when ill. The following additional statement of principles was formulated by the committee and approved by the conference:

1. The medical care of the medically indigent is the joint responsibility of tax-supported and voluntary agencies. The medical needs of this otherwise self-supporting group are not being met. Provision of better medical care for these individuals is the common goal of voluntary agencies, the medical profession and public officials concerned with health and welfare. The achievement of this common purpose requires the joint effort and sincere co-operation of all concerned to develop a complete well-rounded program.

2. The decision as to whether a tax-supported or voluntary agency should bear the cost of this care should be made by persons competent to evaluate the medical, social and economic aspects of each case. This decision might well be based on the principle that the care of an illness constituting only a temporary disability belongs to the voluntary agency, and the care of an illness which produces disability of long or permanent duration falls more logically within the responsibility of the tax-supported agency. This principle should be interpreted to designate not the place of treatment but rather the responsibility for the cost of care.

3. The maintenance of this service would entail cost and personnel not at present supplied through either governmental or voluntary channels.

4. The committee therefore recommends the formation of a permanent committee to plan for the coordination of medical services among the governmental agencies, the voluntary agencies and the medical profession, to the end that adequate medical care may be available to all these groups.

TUBERCULOSIS IN ADOLESCENTS

For the past few years vast numbers of school children and college students have been tested with tuberculin and the x-ray. Out of these studies have come some definite conclusions pertaining to the incidence of tuberculosis in youth. Little has been reported, however, about the outcome of cases discovered in mass-testing programs, doubtless because sufficient time has not elapsed in most of these studies to justify an appraisal of the results of treatment. In Massachusetts, where pioneer work in mass case-finding was begun more than a decade ago, Chadwick and Evarts (Treatment of pulmonary tuberculosis in adolescents. *Am. Rev. Tuberc.* **41**:307–318, 1940) have attempted to evaluate the results of various types of treatment and the fate of tuberculous adolescents. A summary of their findings follows:

The case fatality rate of pulmonary tuberculosis cannot be determined unless we follow a large number of cases from the time diagnoses are made until the death of all the individuals concerned. Unlike acute communicable diseases, tuberculosis is a disease of long duration. It may

be acute, but is more often chronic, with periods of quiescence followed by exacerbations, and may so continue for years.

We may, however, measure the effect of treatment by checking, against each other, groups of patients of similar age who have been treated by different methods for the same length of time. The authors studied the records of 245 patients who had parenchymatous pulmonary tuberculosis at the time they came under observation. Most of them received treatment in some sanatorium. These were divided into three groups according to the time they had been under observation — namely, Group A, from 5 to 10 years; Group B, from 3 to 5 years; Group C, less than 3 years.

The type of treatment received by these groups, further divided according to stage of disease, was found to vary during the past ten years. There was a trend away from routine bed-rest treatment for a preliminary try-out period to be later supplemented by pneumothorax if the disease were not controlled. The present practice is to institute pneumothorax promptly. The minimal cases of Group A admitted to Middlesex County Sanatorium (prior to 1934) received no immediate treatment with pneumothorax; 40 per cent of Group B were given pneumothorax promptly; of Group C, 87 per cent were given pneumothorax soon after admission.

222
40

The conclusion of the authors, based on their own studies and supported by those of others, are that the mortality from tuberculosis in adolescents is high and treatment very discouraging. Morgan, reporting in 1938 on 320 cases of boys and girls ten to eighteen years of age treated in a sanatorium prior to 1933, found that 62 per cent were dead, 14 per cent under treatment, 17 per cent well, and 7 per cent not located. The treatment in this series consisted of prolonged bed-rest supplemented by pneumothorax in a few cases, and then given only after a period of waiting. Zacks recently studied 186 cases treated in sanatoriums and observed for a period of about four years. Those that had routine sanatorium treatment only, showed a mortality of 30.9 per cent for boys and 34.4 per cent for girls; those that had sanatorium treatment plus pneumothorax, showed a mortality of 8.5 per cent for boys and 23.1 per cent for girls. In the authors' group observed for five to ten years, the deaths were 4.8 per cent for the boys and 27.5 per cent for the girls. Half these cases were given pneumothorax.

Pneumothorax should be instituted as soon as possible after diagnosis is made even in the minimal cases, and this should be supplemented by pneumonolysis if satisfactory collapse is prevented by adhesions that can be cut. Ineffective pneumothorax should be abandoned, and some other surgical collapse procedure carried out. When a satisfactory collapse with pneumothorax is obtained, it should be continued for a minimum of three years, and for five years in the cavity cases.

Patients discharged from the sanatoriums should be considered as having completed only the first phase of treatment and should return at frequent intervals for consultation during subsequent years. If they are pneumothorax cases, they will have their refills, and in any event their condition will be rechecked. A roentgenogram taken every three months will be the most important means of following the course of the disease. If the old lesion shows reactivation, or a new one appears, prompt readmission and suitable treatment should be instituted.

The evidence available in this and other studies indicates the ineffectiveness of bed-rest treatment alone in staying the progress of tuberculosis in adolescents. — Reprinted from *Tuberculosis Abstracts*, June, 1940.

MAINE NEWS

Annual Meeting of the Maine Medical Association

The program of the annual meeting of the Maine Medical Association, to be held June 23, 24 and 25 at Rangeley Lakes, is as follows:

Monday, June 24

Morning Session — Conferences.

Ophthalmology: W. H. Chaffers, M.D., Lewiston, chairman.

1. Some Oculomotor Disturbances. David G. Cogan, M.D., Cambridge, Massachusetts.
2. The Diagnosis and Treatment of Some Corneal Conditions. Trygve Gundersen, M.D., Boston.

Pathology: Mortimer Warren, M.D., Portland, chairman.

1. Discussion of Laboratory Methods in Tuberculosis Work. Lester Adams, M.D., Hebron.
2. Discussion of Medical Mycology. Leon Balalian, M.D., Portland.
3. Demonstration of specimens, slides and case reports.
4. Consideration of the advisability of forming a state association of pathologists.

Surgery: Harrison L. Robinson, M.D., Bangor, chairman.

Round-table discussion of the "acute abdomen" and other surgical emergencies.

Anesthesia: Maurice E. Lord, M.D., Skowhegan, chairman.

1. Anesthesia from the Surgeon's Viewpoint. G. E. Young, M.D., Skowhegan.
2. Anesthesia Then and Now. S. E. Sawyer, M.D., Lewiston.
3. Why Should the Physician Anesthetist Be Employed as Chief of the Anesthesia Department in Every Hospital? E. M. Fuller, M.D., Bath.
4. Anesthetic Emergencies, Complications and Treatment. Eugene Brown, M.D., Bangor.
5. Anesthetic Risks with Reference to Choice of Agent. Gilbert Clapperton, M.D., Lewiston.
6. Pentothal Sodium: Its field of usefulness. R. M. Tovell, M.D., Hartford, Connecticut.
7. Anesthesia and Disturbed Physiology. Meyer Saklad, M.D., Providence, Rhode Island.

Medicine: James W. Reed, M.D., Farmington, chairman.

1. Diabetes: The problem from the standpoint of the internist. Sven M. Gundersen, M.D., Hanover, New Hampshire.
   Discussion: H. S. Emery, M.D., Portland.
2. Diabetes: The problem from the standpoint of the surgeon. Harry Brinkman, M.D., Wilton.
   Discussion: I. M. Webber, M.D., Portland.
3. General discussion: directed by E. R. Blaisdell, M.D., Portland.

Obstetrics: R. B. Moore, M.D., Portland, chairman.

1. Indications for and Some Methods of Induction of Labor. Leroy C. Gross, M.D., Lewiston.
2. Routine Episiotomy and Use of Low Forceps in Primiparas. Clarence Emery, Jr., M.D., Bangor.
3. Management of Posterior Positions. E. A. McLean, M.D., Portland.
4. Discussion of general obstetrical problems.

Pediatrics: A. W. Fellows, M.D., Bangor, chairman.

1. The Newer Remedies and the Administration of Fluids. F. P. Webster, M.D., Portland.
2. Symptomatic Treatment. C. S. Bauman, M.D., Waterville.
3. Immunization and Specific Serums. Alice S. Whittier, M.D., Portland.
4. General Principles and Technic of Medication. A. W. Fellows, M.D., Bangor.

Afternoon Session — Clinicopathological Conference: Julius Gottlieb, M.D., chairman.

Discussion: Dr. Reginald Fitz, M.D., Boston.

Tuesday, June 25

Morning Session — Conferences.

Medicolegal Medicine: W. S. Stinchfield, M.D., Skowhegan, chairman.

Timothy Leary, M.D., Boston, and Attorney General F. U. Burkett, Portland, will address this meeting.

Nervous and Mental Diseases: F. C. Tyson, M.D., Augusta, chairman.

1. Psychotherapy in General Medical Practice. M. R. Kaufman, M.D., Boston.
2. The Rorschach Test in Diagnosis of Psychoses and Psychoneuroses. A. A. Weil, M.D., Augusta.
3. Use of Intelligence Tests in Diagnosis of Psychotic Patients. G. R. Foster, Ph.D., Augusta.
4. Summary of Two Years' Experience with Insulin in the Treatment of Certain Psychoses. E. A. Blank, M.D., Bangor.

Medicine: F. A. Winchenbach, M.D., Bath, chairman.

Head Injuries: The responsibility of the general practitioner; initial treatment; differential diagnosis; treatment of non-surgical groups; treatment of surgical groups; prognosis. A panel discussion by Drs. M. E. Joss, Richmond, G. A. Gregory, Boothbay, W. B. Mitchell, Wiscasset, W. V. Cox, Lewiston, and H. E. MacDonald, Jr., Portland.

Surgery: C. H. Jameson, M.D., Rockland, chairman.

1. Estimating the Surgical Risk. E. E. O'Donnell, M.D., Portland.
2. Pitfalls of Surgery. E. H. Risley, M.D., Waterville.
3. Choice of Anesthesia. Gilbert Clapperton, M.D., Lewiston.
4. Postoperative Management. W. V. Cox, M.D., Lewiston.
5. Safeguarding the Surgeon. Attorney H. E. Locke, Augusta.

Ear, Nose and Throat: F. T. Hill, M.D., Waterville, chairman.

Recent Advances in Otolaryngology:

1. The External Ear. Pierre Provost, M.D., Augusta.
2. The Middle Ear and Mastoid. W. A. Ellingwood, M.D., Rockland.
3. Ménière's Disease. P. J. Mundie, M.D., Calais.
4. Chemotherapy in Sepsis in Otolaryngology. E. R. Irgens, M.D., Waterville.
5. Paranasal Sinuses. R. M. McQuoid, M.D., Bangor.
6. Allergy in Otolaryngology. C. H. Gordon, M.D., Portland.
7. The Pharynx and Larynx. G. O. Cummings, M.D., Portland.
8. Neoplasms Involving the Ear, Nose and Throat. A. C. Hurd, M.D., Gardiner.

Gynecology: A. P. Leighton, M.D., Portland, chairman.

1. Eclampsia and Its Treatment. W. F. W. Hay, M.D., Portland.
2. Vaginal Discharges: Their significance and treatment. T. C. Bramhall, M.D., Portland.
3. Postclimacteric Bleeding. R. L. Reynolds, M.D., Waterville.
4. Menorrhagia and Metrorrhagia. M. F. Ridlon, M.D., Bangor.

Afternoon Session — Scientific Symposium.

1. President's Address.
2. Compound Injuries to the Hand. H. C. Marble, M.D., Boston.
3. Obstetric Problems. P. L. B. Ebbett, M.D., Houlton.
4. Traumatic Intracranial Hemorrhages, with Demonstration of Brains. Timothy Leary, M.D., Boston.

Evening Session — Banquet.

Quackery in Medicine. Morris Fishbein, M.D., Chicago.

Atmospheric Ragweed Pollen Survey for 1939

In Portland, glass slides were exposed for fifty consecutive days on the roof of the Maine General Hospital, under the supervision of the pathologist, Dr. Mortimer Warren. The highest count was on September 2; the number of "hay-fever days" (count of 25+) was ten; the pollen index (Durham) was 14. In Camden the receiving station was placed at the CCC camp, under the supervision of the Maine Health Bureau. The fifty-day season, from August 10 to September 28, showed the highest count on September 3; the number of "hay-fever days" was seventeen; the pollen index was 26. After a re-check Mr. O. C. Durham stated that the Camden figures were higher than anything he had had from Maine. In answer to the question as to how to account for this, Dr. C. B. Sylvester, who is in charge of the Pollen Survey, stated that more ragweed was found in the vicinity of the CCC camp than anywhere else around Camden and that the soil should be planted with some worthwhile cover, otherwise ragweed would flourish: unbroken turf does not grow ragweed.

Recommendations of the Advisory Committee on Syphilis Control

This committee has recommended that a uniform system of records be adopted in all treatment clinics and that a duplicate copy be filed at the office of the Bureau of Health. It also recommends that drugs distributed by the Bureau of Health to physicians and clinics for the treatment of syphilis be limited to the following preparations: mercury cyanide, sulfarsphenamine, Tryparsamide, bismuth subsalicylate in oil, Bismarsen, distilled water, Mapharsen and neoarsphenamine.

In going over the records of the bureau a 12 per cent increase in blood examinations was noted during the fiscal year — a hopeful sign. There are at present twenty-nine clinics in the following cities: Augusta, Bangor, Bath, Belfast, Biddeford, Bingham, Calais, Danforth, Eastport, Ellsworth, Grand Isle, Guilford, Houlton, Island Falls, Lewiston (2), Millinocket, Old Town, Portland (3), Presque Isle, Rockland, Rumford, Sanford, Skowhegan, Waterville, Wilton and Winthrop.

CORRESPONDENCE

DEPRIVATION OF LICENSES

To the Editor: The license of Dr. Joseph D. Beauparlant, 528 Eastern Avenue, Fall River, Massachusetts, was revoked by the Board of Registration in Medicine on June 6 because of conviction in court of abortion, and that of Dr. James B. Ryan, 53 Maple Street, Easthampton, Massachusetts, was suspended on the same date because of drug addiction and violation of the Harrison Narcotic Law.

STEPHEN RUSHMORE, M.D., *Secretary,*
Board of Registration in Medicine.

State House,
Boston.

REPORTS OF MEETINGS

EDWARD K. DUNHAM LECTURES

The Dunham Lectures at Harvard Medical School for 1940 were delivered by Dr. S. Walter Ranson, professor of neurology and director of the Institute of Neurology, Northwestern University Medical School, Chicago.

The first lecture on March 4, was concerned with "The Hypothalamus and the Sympathetic Nervous System." In experiments on cats the hypothalamus was stimulated, a procedure which resulted in an elevation of blood pressure, an increase of the rate and depth of the respirations, dilatation of the pupils and an increased bladder tension. All except the last phenomenon, which must be regarded as parasympathetic, were held to result from stimulation of the sympathetic centers. Accurate localization of the stimulus demonstrated that the best effect was obtained from sites in the lateral areas of the hypothalamus and around the fornix, but not in the internal capsule. The bladder contraction mechanism was further localized near the anterior commissure. The path of the fibers was considered to descend through the central gray matter and tegmentum of the midbrain and the anterolateral part of the cervical cord.

In an attempt to determine the role of the hypothalamus in the regulation of body temperature, bilateral lesions were placed in various parts of the hypothalamus in cats, and tests were subsequently made of their ability to withstand environmental heat and cold. In other experiments localized heating with a high-frequency current was used to locate the part of the brain which is specifically responsive to heat and presumably activated by the warmth of the blood when the temperature of the body rises too high. Dr. Ranson concluded that there are two thermostatic centers at the base of the brain. In the preoptic and supraoptic regions is a center which is sensitive to heat; it prevents overheating by activating a more caudally-situated panting center. The pathway connecting the heat-sensitive center with the panting center runs through the lateral hypothalamus. The center which by conserving body heat prevents chilling is coextensive with the sympathetic center in the hypothalamus. Large bilateral lesions in the caudolateral part of the hypothalamus interrupt the descending pathway from both these centers and result in persistent lack of ability to adjust to both heat and cold. Medially-placed lesions had very little effect on temperature regulation.

In considering the significance of these findings for man, Dr. Ranson reminded his audience that the only difference in man is his ability for rapid loss of heat through sweating: his production and maintenance of heat are essentially the same as those for animals. Work on monkeys indicated that the hypothalamic centers are essentially the same as those in the lower animals, at least so far as the center for the conservation of heat is concerned.

As to how indispensable such a hypothalamic temperature-regulating center is, Dr. Ranson stated that although some control exists in the spinal animal, such preparations cannot respond as well to sudden, marked changes of temperature as they can to slow, slight changes.

In conclusion Dr. Ranson stated that the central control for the sympathetic nervous system lies in the caudolateral areas of the hypothalamus at the level of the tuber cinereum and mammillary bodies and integrates the system into purposeful patterns. Thus, on exposure to cold, there is a resultant vasoconstriction, fluffing of the hair and increased heat formation, all of which can be prevented by lesions suitably situated.

On March 6, Dr. Ranson discussed "Hypothalamicohypophysial Relations." Since the functions of these two organs that are so closely related anatomically have been associated, and since Wislocki has shown a lack of blood drainage from the pituitary gland to the hypothalamus, an attempt was made to determine the nature of the interrelation.

It is known that the nerve fibers connecting these two structures form two bundles, called the supraopticohypophysial and tuberohypophysial tracts. Numerous experiments revealed that it was only lesions of the former fibers which caused diabetes insipidus and also resulted in atrophy of the supraoptic nucleus and neural lobe of the hypophysis. The resultant disease had two phases, a temporary one for four or five days and the permanent stage developing about a week later. The polyuria regularly preceded the polydipsia.

In the rhesus monkey it was demonstrated that the severity of the diabetes insipidus was proportional to the amount of the neurohypophysis which was left intact above the level of the transection of the supraopticohypophysial tract in the medial eminence or the neural stalk. Such lesions cause degeneration of the neurohypophysis and of the supraoptic nucleus. Microscopic and macroscopic examinations, as well as hormonal assay and substitution therapy, indicate that it is the failure of the neurohypophysis that causes diabetes insipidus, yet a hypophysectomy fails to produce the syndrome. Dr. Ranson suggested that the two findings can be correlated by hypothesizing the necessity for leaving the anterior lobe of the pituitary gland intact.

Dr. Ranson cited cases of this disease in man studied post mortem in which destruction of the supraoptic nucleus, the supraopticohypophysial tract or the neurohypophysis resulted in destruction of all three members of the closely integrated system.

The speaker went on to discuss the question of the effect of the hypothalamus on the anterior hypophysis. Anatomically, few fibers can be demonstrated connecting these regions. Yet hypothalamic lesions may simulate the antiinsulin effect of the anterior lobe of the pituitary gland, although section of the neural stem does not result in hypoglycemia or insulin sensitivity.

In regard to adiposogenital dystrophy, Dr. Ranson indicated that the adiposity may result from a hypothalamic lesion, and the genital dystrophy from the anterior pituitary lesion. In order, however, to produce obesity in rats, enormous bilateral lesions around the third ventricle were necessary, and this condition was even more difficult to produce by hypothalamic lesions in monkeys. The small-

est effective lesions were in the ventromedial, the dorsomedial and the arcuate nuclei. No macroscopic effect on the pituitary gland or its stalk was noted, and microscopic studies are not as yet complete. The removal of the hypophysis after a week seemed further evidence that this organ is not necessary for the typical obesity changes.

That the hypothalamus may also have some relation to the gonadotropic hormones was indicated by ventral lesions near the optic chiasm and infundibulum, which resulted in sterility and impotence associated with varying degrees of atrophy of the internal and external genitalia. Those in the largest group were anatomically normal, but failed to exhibit typical estrous behavior; Dr. Ranson concluded that a center of the hypothalamus near the optic chiasm is necessary for the mating reaction in guinea pigs, despite a normal sexual cycle and an intact pituitary gland.

The final paper of the series, on March 8, was concerned with "The Hypothalamus and Behavior." Dr. Ranson alluded to the "sham rage" of Cannon's decorticate cats and to the work of Bard suggesting the need for the posterior hypothalamus for the expression of emotion. It was shown that stimulation of the hypothalamus results in part of the rage pattern — dilatation of the pupils, rapid respiration and elevated blood pressure — while under ether, and the whole response following recovery from anesthesia. Destruction bilaterally, on the other hand, caused somnolence, lethargy and a tendency to catalepsy in cats. The initial somnolence wore off gradually, but there was a persistent lack of motor initiative. The monkeys with such lesions were somnolent but not comatose; they were emotionally stolid. Many of them showed hypothermia, but this was not responsible for the somnolence. One animal showed classic catalepsy.

Lesions of the thalamus, subthalamus and anterior hypothalamus failed to cause somnolence, as did also an interruption of the paths to and from the thalamus and cortex.

As a result of the findings, Dr. Ranson discussed the mechanism of sleep. Although disclaiming knowledge of the mechanism for falling asleep, it was predicted that the means of maintaining a proper balance between the sleeping and the waking states reside in a hypothalamic waking center, independent of the cortex. Evidence pointing in the same direction is found in von Economo's studies of encephalitis lethargica in man. He reported that lesions in the posterior part of the floor of the third ventricle result in somnolence, while lesions situated farther forward, near the globus pallidus, may result in insomnia. The experimental lesions merely serve to reproduce and localize a long-known fact and to emphasize the necessity for the integrity of a waking center. The transient character of these manifestations of posterior hypothalamic lesions suggests that despite its great importance, this part of the brain is not the only center for controlling emotional behavior and for maintaining the waking state.

Dr. Ranson stated that tumors of this region in man may cause mania or alternating irritability and unreasonableness with somnolence. Furthermore, operations around the third ventricle have caused lively mania, whereas manipulation of the lateral ventricles or the caudate nucleus results in no such symptoms.

In summary, Dr. Ranson stated that the hypothalamus serves to activate the sympathetic nervous system and to integrate its activity into purposeful patterns, that it maintains the internal secretions of the neurohypophysis and may have some effect on the anterior lobe of the pituitary gland and, finally, that it plays an important part in the expression of emotions and in the maintenance of the waking state.

TUFTS COLLEGE MEDICAL ALUMNI LECTURE

The annual alumni lecture of the Tufts College Medical School was delivered on April 3 by Col. G. R. Callender, director of the Army Medical School, who spoke on "Diarrheal Diseases."

Dr. Callender gave a résumé of the historical background of the diarrheal diseases and then discussed some important aspects of each type of infection. Concerning the epidemiology of amebic dysentery, it was stated that water, since it is rarely a cause, should not be blamed until food, fingers and flies have been eliminated as carriers. Some recent investigations, however, have raised doubt as to the complete efficacy of the usual concentrations of chlorine used in water purification against the cystic form of the ameba.

Dr. Callender contrasted the symptoms and pathological findings in bacillary dysentery with those of the amebic variety. In the latter disease symptoms and laboratory findings are usually minimal until secondary invaders enter the small, scattered ulcers. This superimposed infection, it was pointed out, may be caused by one of the dysentery bacilli. Bacillary dysentery, on the other hand, is an acute infectious disease, with characteristic systemic response and laboratory findings and with widespread pathologic changes of the intestinal tract. The passage of a stool in this disease is painful, whereas there is usually little discomfort in uncomplicated amebic dysentery.

In discussing food poisoning, Dr. Callender stated that some of the staphylococci that are recovered from cases of food poisoning will grow at 8°C., especially if they have been previously warmed for a few hours. Many household refrigerators are operated at even higher temperatures than this. These organisms may also thrive in mediums containing the same ingredients in the same strength as are in the brine used to pickle hams before smoking. The early symptoms in cases of staphylococcal food poisoning are epigastric pain and vomiting; diarrhea may follow later.

No inflammatory exudate has been seen in the diarrhea of the condition which is called "intestinal influenza."

NOTICES

CONSULTATION CLINICS FOR CRIPPLED CHILDREN IN MASSACHUSETTS, UNDER THE PROVISIONS OF THE SOCIAL SECURITY ACT

Clinic	Date	Orthopedic Consultant
Salem	July 1	Harold C. Bean
Haverhill	July 3	William T. Green
Lowell	August 2	Albert H. Brewster
Gardner	July 9	Mark H. Rogers
Brockton	July 11	George W. Van Gorder
Pittsfield	July 15	Francis A. Slowick
Northampton	July 17	Garry deN. Hough, Jr.
Worcester	July 19	John W. O'Meara
Fall River	July 22	Eugene A. McCarthy
Hyannis	July 23	Paul L. Norton

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next written examination and review of case histories (Part I) for Group B candidates will be held in the various cities of the United States and Canada on Saturday, January 4, 1941, at 2:00 p.m. Candidates who successfully complete the Part I examinations proceed auto-

matically to the Part II examinations held later in the year. Applications for admission to Group B, Part I, examinations must be on file in the secretary's office not later than October 5, 1940.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire board, meeting at Cleveland, Ohio, immediately prior to the 1941 meeting of the American Medical Association.

After January 1, 1942, there will be only one classification of candidates, and all will be required to take the Part I and Part II examinations. For further information and application blanks, address Dr. Paul Titus, secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

AMERICAN COLLEGE OF PHYSICIANS

The twenty-fifth annual session of the American College of Physicians will be held in Boston, with general headquarters at the Hotel Statler, on April 21–25, 1941. Dr. James D. Bruce, of Ann Arbor, Michigan, president of the American College of Physicians, will have charge of the program of general scientific sessions. Dr. William B. Breed, of Boston, has been appointed general chairman of the session; he will be in charge of the program of clinics and demonstrations in the hospitals and medical schools and of the program of panel and round-table discussions to be conducted at the headquarters.

SOCIETY MEETINGS AND CONFERENCES

JUNE 25–27 — Medical Library Association. Page 862, issue of May 16.

JUNE 27 — Pentucket Association of Physicians. The Try-Angle, Groveland.

SEPTEMBER 2–6 — American Congress of Physical Therapy. Page 862, issue of May 16

OCTOBER 8–11 — American Public Health Association. Page 655, issue of April 11.

OCTOBER 11, 12 — Pan-American Congress of Ophthalmology. Page 898, issue of May 23.

OCTOBER 14–25 — 1940 Graduate Fortnight of the New York Academy of Medicine. Page 938, issue of May 30.

OCTOBER 21 — American Board of Internal Medicine, Inc. Page 369, issue of February 29.

JANUARY 4, 1941 — American Board of Obstetrics and Gynecology. Page 1064.

APRIL 21–25, 1941 — American College of Physicians. Notice above.

DISTRICT MEDICAL SOCIETY

MIDDLESEX NORTH

JULY 31.

OCTOBER 30.

BOOKS RECEIVED FOR REVIEW

Malaria and Colonization in the Carolina Low Country 1526–1696. St. Julien R. Childs. The Johns Hopkins University Studies in Historical and Political Science. Series LVIII, Number 1. 292 pp. Baltimore: Johns Hopkins Press, 1940. $2.50.

La thoracoplastie élective: primitive, d'association, de substitution. J. Angirany, L. Michon and A. De Micheaux. 127 pp. Paris: Masson et Cie, 1940. $1.35.

Aux confins de la dyspepsie. Maurice Loeper. 307 pp. Paris: Masson et Cie, 1940. $1.85.

Traité de la transfusion sanguine. G. Jeanneney and G. Ringenbach. 386 pp. Paris: Masson et Cie, 1940. $2.50.

Dizionario di Medicina per Medici e Famiglie. Giulio Casalini. 2 vol. 1785 pp. Torino, Italy: Unione Tipografico — Editrice Torinese, 1939. Lire 300.

The New International Clinics: Original contributions, clinics, and evaluated reviews of current advances in the medical arts. Edited by George Morris Piersol. Vol. 2, N. S. 3. 365 pp. Philadelphia, Montreal and New York: J. B. Lippincott Co., 1940. $3.00.

The Journal of Gideon Mantell, Surgeon and Geologist: Covering the years 1818–1852. Edited by E. Cecil Curwen. 293 pp. New York, London and Toronto: Oxford University Press, 1939. $4.25.

Complete Guide for the Deafened. A. F. Niemoeller. 256 pp. New York: Harvest House, 1940. $3.00.

Handbook of Hearing Aids. A. F. Niemoeller. 156 pp. New York: Harvest House, 1940. $3.00.

Physical Therapy for Nurses. Richard Kovács. Second edition. 335 pp. Philadelphia: Lea & Febiger, 1940. $3.25.

Adventures of a Biologist. J. B. S. Haldane. Second edition. 281 pp. New York and London: Harper & Brothers, 1940. $2.75.

BOOK REVIEWS

A Textbook of Surgery. John Homans. Fifth edition. 1272 pp. Springfield, Illinois, and Baltimore: Charles C Thomas, 1940. $8.00.

Surgery is no longer a subject that can be taught in a course or series of lecture-clinics. The student constantly encounters surgical material in his clinical experience, and often finds difficulty in crystallizing the many apparently unrelated problems. Dr. Homans's book is a great help in systematizing the conditions that need surgery for effective therapy.

The book stresses underlying principles rather than simply giving the correct diagnostic procedure and treatment for a particular disease. A historical survey of the subject is found at the beginning of each section. Then follow the anatomy and physiology of the organ, thereby suggesting to the student the fundamentals of good medical reasoning. If the reader cannot find the detail of information desired, there is appended an excellent bibliography for further reference. Discussions of the surgery of the organs of special sense, of the female pelvic organs, of fractures and of the thorax serve as examples of the large field that is surveyed.

There have been many new advances in surgery since the last edition four years ago. The use of vitamin K in jaundice, the ligation of a patent ductus arteriosus and the treatment of parathyroid tetany with A.T. 10 are only a few illustrations of how this book keeps pace with recent developments. Dr. Homans has written a masterly treatise on modern surgery and is to be commended for his zeal in keeping it abreast of current progress.

Love Problems of Adolescence. Oliver M. Butterfield. 212 pp. New York: Emerson Books, Inc., 1939. $2.25.

This book is a valuable contribution to a growing accumulation of information concerning the trends of adolescent thinking and interest, particularly as they apply to the sexual mores, and it is unique in that the information is derived from concrete questions raised by the young people themselves and is not merely an interpretation of their emotional interests as seen through the eyes of their elders.

Counselors of youth will find nothing new by way of information but much to substantiate their own experiences when confronted with love problems of boys and girls.

The introduction is concerned with a description of the study, a definition of "love problems" and a consideration of the character of the group and the modus operandi of the study. In the five succeeding chapters the author discusses the various questions which appear as the im-

mediate concern of these young people, running from means of securing dates, parental interference, night hours, chaperons and so forth, through miscellaneous behavior problems, dancing, smoking, drinking, kissing, petting, sex stimulation, masturbation, homosexuality and the social significance of menstruation and venereal disease. He found that the young people wished to discuss matters of mate selection and teen-age love; that there was an earnest desire for factual sex information; and that the trend is to think of love, sexual relations and marriage relationships as permanent.

In discussing the age factor in marriage the author emphasizes that those who recommend early marriages are so much concerned with the biological factor that they fail to give adequate consideration to the economic, sociological and psychological factors. However, he points out that studies to date have tended to negate the age factor as a means of predicting either success or failure in marriage.

Birth control and divorce appear to have been academically discussed, but the meat of the study is best expressed by the author when he says:

> Most of the spontaneous questions in these groups centered on the sexual aspects of marriage. Here lies the mystery of the unknown and the undiscussed. Anxiety on this score grows partly out of the labored efforts of adults to cover up this side of marriage and the persistent repetition during childhood and adolescence that any form of sexual indulgence is wrong. Uninstructed youth finds it difficult to understand how what is wrong before marriage can become the highest expression of affection in it.

The New International Clinics: Original contributions, clinics and evaluated reviews of current advances in the medical arts. Edited by George M. Piersol. Vol. 4. N. S. 2. 339 pp. Philadelphia: Montreal and New York: J. B. Lippincott Co., 1939. $3.00.

The treatment of pneumococcal pneumonia continues to attract considerable attention, and in this volume one finds the subject approached from the chemotherapeutic and serotherapeutic angles; there is also an article on the surgical complications. In addition, there are discussions of such unusual subjects as pseudo-arteriosclerosis, vitamin K in pseudohemophilia hepatica of childhood, and myogelosis in postural foot defects. The remainder of the volume consists of a discussion of conventional subjects, all of which round out an excellent publication.

Traité de biocolloïdologie. Tome V. *État colloïdal et médecine.* Fascicule 1. *Le Sang.* 151 pp. Fascicule 2. *Liquides et tissus organiques.* 299 pp. W. Kopaczewski. Paris: Gauthier-Villars, 1938. 160 Fr. fr.

The author of this two-volume work states that the medical profession has paid but little attention to the fundamental physical sciences and their application to the various problems of disease. He believes that studies of the behavior of the colloids will inevitably solve the riddles of human disease, provided only that the doctors learn something about them. He quotes d'Arsonval as saying "that the professors of clinical medicine are highly decorous and highly decorated individuals who ignore physics and boast about it." He states, perhaps truly, that one is struck by the general lack of comprehension by the medical profession of the basic problems of experimental medicine, by its lack of mathematical formulation of results and by its erroneous appreciation of them. In place of clear and readily established notions, it has forged a Greco-Latin nomenclature with high-sounding words replacing actual facts. It is a very entertaining introduction, which is capped by a lapse into poetic prose and then into poetry itself. "Following out ideas, inspired by the passion of research and by the curiosity of nature, controlled by experience, guided by the rhythm of pure reason, is to possess the palpitating life of true poetry."

After this divine introduction, one is disappointed in Chapter I which deals, very sketchily, with such matters as blood volume, the total red-cell count, the various blood chemical constituents and so forth. However, this disappointment is more than atoned by the conclusions, which state that since chemical and hematological data vary so greatly, it is impossible to place any credence on their results. "Ultra precise chemical methods can only result in gross errors in diagnosis, since the errors of the methods are greater than the physiological limits of the chemical studied." The author states that the physical characters of the serum and plasma tell another story.

The physical measurements which the author believes are of great importance and which have been ignored, are the density of the blood, the freezing-point, the electrical conductivity, the pH, the viscosity, the surface tension, the refractive index and the rotatory power. Curiously enough, no mention is made of the sedimentation rate, a physical measurement which has become so popular. The application of these methods to the blood, spinal fluid, urine, saliva and, finally, organ extracts is indicated. The value of these methods in studying the effects of mineral waters, coffee, beer and so forth on the composition of the urine is well brought out. Aside from this, one fails — perhaps due to lack of comprehension — to get much out of this erudite work. One must conclude, therefore, that either the author is a genius far ahead of his time or he is, shall we say, misguided. Time alone will tell.

Trapping the Common Cold. George S. Foster. 125 pp. New York: Fleming H. Revell Co., 1940. $1.25.

The author advances the theory that by following certain rules of diet, fluid intake and exercise one can be protected from attacks of the common cold. Although the reviewer cannot take exception to some of the recommendations, at least insofar as creating a sense of general well-being is concerned, the book contains a great deal of physiological nonsense. There is no scientific proof of the main thesis, namely, that the common cold can be obviated in this manner.

Modern Diabetic Care: Including instructions in the diet and the use of the old and new insulins. Herbert Pollack. 216 pp. New York: Harcourt, Brace & Co., 1940. $2.00.

This excellent manual is intended for use by diabetic patients, physicians and dietitians. The style is simple and direct, and excessive technical details are avoided. The usual chapters dealing with the nature of diabetes, the physiology of nutrition, the technic of insulin administration and the prescription of diets are included. Diabetic coma, surgery and juvenile diabetes are briefly discussed.

One may criticize his definition of diabetes — "the loss of the body's ability to burn sugars" — as being too great a simplification. The therapeutic use of alcohol for patients suffering with impaired peripheral circulation scarcely deserves mention. There is some inconsistency in prescribing diets accurately in grams and yet failing to teach patients the use of food scales; other students of diabetes have found that the use of food scales, at least for a few months, is the most dependable method of teaching food values.